Operator's Manual for 1948

LIGHT and HEAVY DUTY TRUCKS

CHEVROLET

OPERATOR'S MANUAL
FOR 1948
Chevrolet Light and Heavy Duty Trucks

INTRODUCTION

When you purchased your new Chevrolet truck it was a business investment on your part. You can rightly expect it to pay dividends on the investment by handling your hauling and transportation requirements.

Chevrolet trucks are designed to handle maximum loads efficiently and economically, providing they are given the care and consideration due any fine piece of machinery subjected to severe operating conditions.

This booklet has been prepared to give you information pertaining to the driving, care and maintenance of your truck as well as to provide technical data that may be of value or interest to you.

The subject index at the right is a ready reference to the key subjects and will enable you to find any subject covered in the booklet.

Chevrolet Motor Division
General Motors Corporation
Detroit 2, Michigan

SUBJECT INDEX

Fig. 1—Controls and Instruments—½ and ¾ Ton

CHAPTER I

DRIVER'S OPERATING INFORMATION

BREAKING-IN PERIOD

The moving parts of your Chevrolet truck are precision built to very close fits. For this reason high speeds should be avoided and special attention given to proper lubrication for the first 2,000 miles.

To properly break in the moving parts and assure long carefree service do not drive faster than:

35 miles per hour for the first 100 miles
45 miles per hour for the next 200 miles
50 miles per hour for the next 200 miles

Continuous high speed driving should be avoided until the truck has been driven 2,000 miles. The engine should not be raced or run at high speed in lower gears, especially until it is thoroughly warmed up.

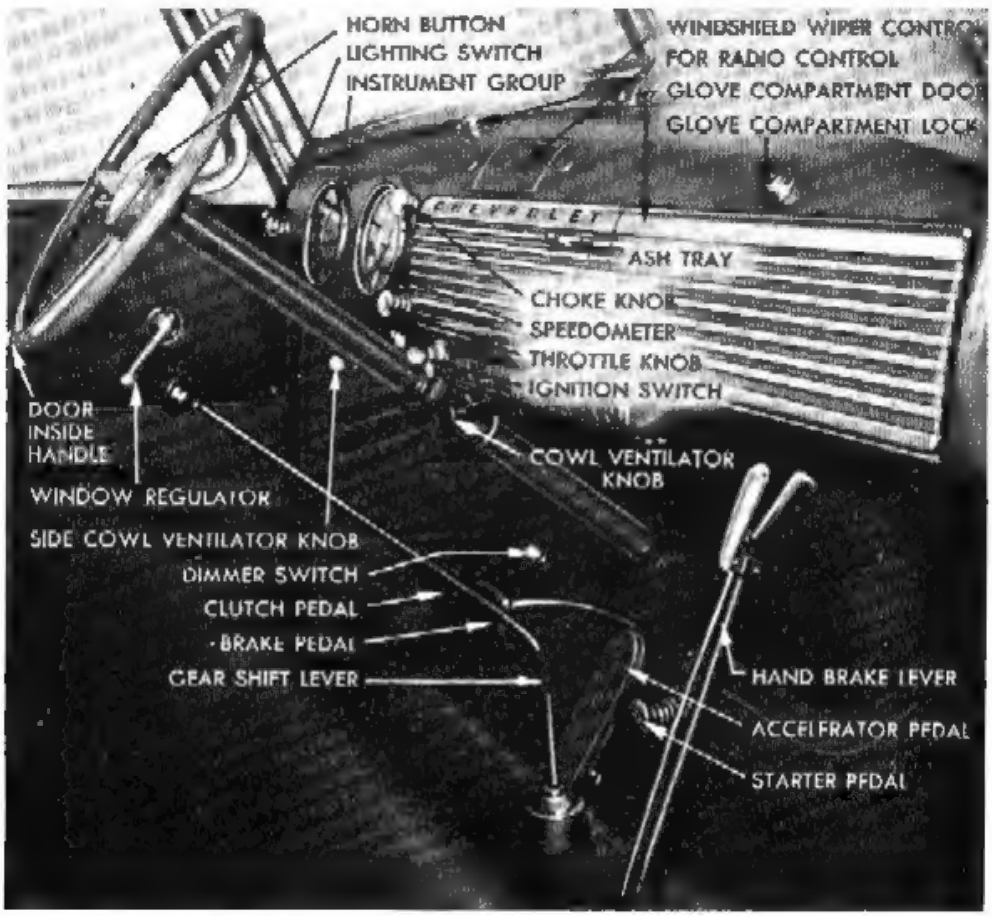

Fig. 2—Controls and Instruments—1-1½ and 2 Ton

CONTROLS AND INSTRUMENTS

The type, location and operation of instruments and controls vary on different models and makes of vehicles; therefore, regardless of the experience an owner or driver may have had it is advisable to familiarize one's self with the instruments and controls, and their use before driving this new truck. The locations of the various instruments and controls are shown in figures 1 and 2.

Instrument Group

Gasoline Gauge. The electrically operated gasoline gauge is at the upper left side of the instrument group (fig. 3). It is wired through the ignition switch; therefore, only indicates the amount of fuel in the tank when the ignition switch is turned on.

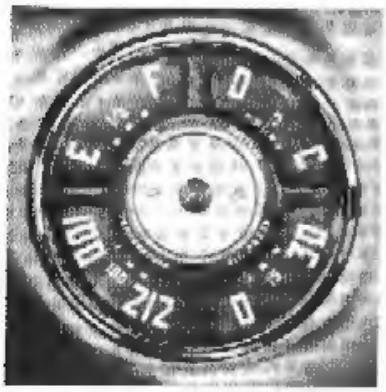

Fig. 3—Instrument Group

Temperature Indicator. The water temperature indicator is at the lower left side of the instrument group (fig. 3). It is, in effect, a thermometer with the operating bulb located in the water jacket at the left rear corner of the cylinder head. Normally this thermometer will register between 140 and 180 degrees when the engine is thoroughly warmed up. The driver should watch this instrument closely, as a quick rise in temperature usually indicates trouble. Should the temperature rise above 200 degrees the engine should be stopped and a check made for cause of overheating (see "Hints for Locating Road Troubles," page 85).

NOTE: Do not remove the radiator cap when engine is excessively hot, do not put water in a hot engine and do not run engine when indicator is above 212 degrees.

Ammeter (Battery Indicator). The ammeter is the right upper instrument in the group (fig. 3). The ammeter indicates the flow of current to and from the battery, except the current taken by the starting motor. When the engine is turned off or idling and any of the electrical equipment is in use, it is

natural for the ammeter to show discharge. When the engine is running at medium speed and most of the electrical equipment is turned off the ammeter should show a slight charge, depending on the state of charge of the battery. Should the ammeter show discharge when the truck is being driven at medium speed, trouble is indicated in the charging system and the battery will soon become discharged.

Oil Pressure Gauge. This instrument is in the lower right side of the instrument group (fig. 3). The oil pressure gauge indicates whether or not the oil pump is working, but does not indicate the amount of oil in the crankcase.

The pressure gauge reading is controlled by the engine speed and the oil being used. A low reading is normal at idling speeds with a warm engine and light oil; however, as the engine speed is increased the hand should move over near the "15" mark. In cold weather (especially with heavy oil) the hand may move over to the "30" mark at comparatively low engine speeds. This indicates that the oil is too heavy to properly lubricate the engine.

NOTE: Do not accelerate the engine excessively until the oil is sufficiently warm to permit a lower pressure. If the gauge does not show any pressure, stop the engine immediately and determine the cause.

Fig. 4—Speedometer

Speedometer. The speedometer is located to the right of the instrument group (fig. 4). As the vehicle is driven, the hand moves around the dial indicating the speed of the vehicle in miles-per-hour. The figures visible through the opening near the center of the speedometer indicate the total mileage the truck has been driven. This part of the speedometer is known as the odometer.

Fig. 5—Ignition Switch

Switches

Ignition Switch. The ignition switch, located near the bottom of the instrument panel to the right of the steering column (fig. 5), is used to

"make" and "break" the ignition circuit when starting or stopping the engine. There are two "off" positions, one to the right and one to the left of the "on" (vertical) position. The key can be removed with the ignition switch in any of the three positions. When the ignition is turned off by turning the switch clockwise and the key removed the ignition can be turned "on" or "off" without the use of a key. When the ignition is turned off by turning the switch counterclockwise and removing the key the ignition is locked "off".

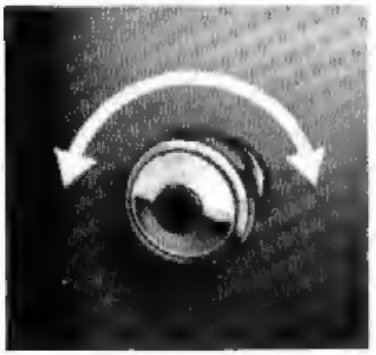

Fig. 6—Lighting Switch

Lighting Switch. The Lighting switch, located to the left of the instrument group (fig. 6) controls the instrument lamps, headlamps, parking lamps and tail lamp. When this switch is pulled out to the first "on" position the parking lamps and tail lamp are lighted. When the switch is pulled out to the last position the headlamps and tail lamp are lighted. Current for the lighting circuits passes through a thermal circuit breaker located on the lighting switch behind the instrument panel. In case all lights fail to operate check for trouble at the thermal circuit breaker. The instrument lights can be dimmed or turned off by turning the light switch button clockwise.

Dimmer Switch. The dimmer switch located on the toe-board to the left of clutch pedal (fig. 10) is used to switch the headlamp beam from "high" to "low" or "low" to "high". Each time the switch is depressed the light beam is reversed. A headlamp beam indicator is located between the 0 and 80 at the bottom of speedometer. When the lights are on upper beam a red light is visible through the indicator opening. Avoid use of upper beam when meeting other vehicles on the highway or in city traffic.

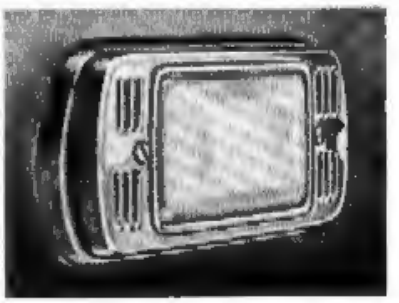

Fig. 7—Dome Light and Switch

Dome Lamp Switch. The dome lamp switch is located at the left end of the dome lamp assembly directly above the rear window (fig. 7). Moving this switch backward turns

the light on and moving it forward turns the light off.

Horn Button. The horn button is conveniently located at the center of the steering wheel. Depressing the button blows the horn.

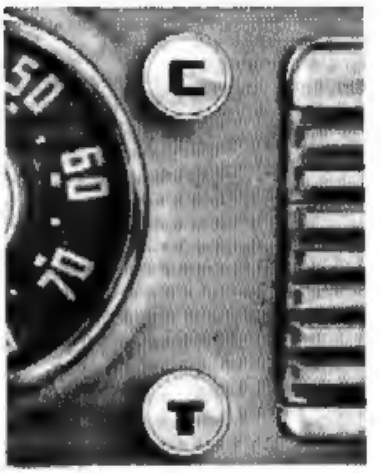

Fig. 8—Throttle and Choke Controls

Controls

Hand Throttle Control. The throttle control knob is located on the instrument panel directly above the ignition switch (fig. 8). Pulling out on the control knob opens the carburetor to provide a uniform engine speed above the idle setting. It is generally advisable to pull the hand throttle control out slightly when starting the engine, especially if the engine has a tendency to stall a time or two after starting.

Choke Control. The carburetor choke control knob is located directly above the hand throttle control knob (fig. 8). The purpose of this control is to close (or partly close) the carburetor choke valve restricting the air intake and producing a richer fuel mixture for starting.

When the engine is warm and the weather is warm, it should not be necessary to use the choke when starting the engine. When it is necessary to use the choke for starting, it should be pushed part way in as soon as the engine starts and all the way in as soon as the engine will run smoothly without its use.

CAUTION: Excessive use of the choke will provide a fuel mixture too rich to burn. Some of this unburned fuel will leak past the pistons and dilute the engine oil and result in improper lubrication, excessive engine wear and poor performance.

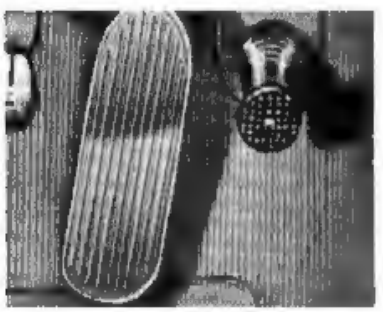

Fig. 9—Starter and Accelerator Pedals

Starter Pedal. The starter pedal is located near the center of the toe board to the right of the accelerator pedal (fig. 9). Depressing this pedal with the foot engages the starting motor pinion with the teeth in the

engine flywheel and closes the starter switch to provide an electrical circuit between the battery and starting motor, thereby cranking the engine. The starting motor draws considerable current from the battery; therefore, it should not be operated for more than 15 seconds at a time. If the engine does not start, locate the cause and correct it before the battery is run down.

CAUTION: The starter pedal must be released as soon as the engine starts and should never be depressed when the engine is running or serious damage may result.

Accelerator Pedal. The accelerator pedal, located to the left of the starter pedal (fig. 9), is used to open and close the carburetor throttle valve. The driver rests his right foot on this pedal and by varying the pressure applied opens the carburetor throttle the correct amount to obtain the desired engine or vehicle speed.

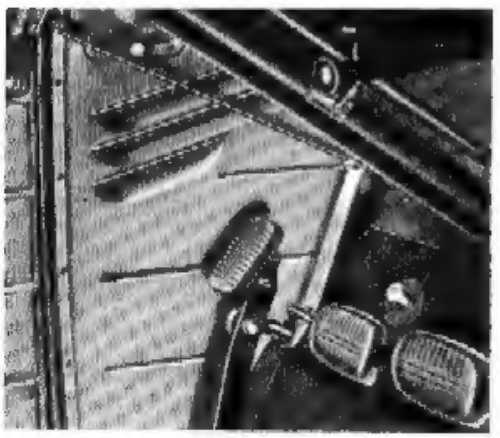

Fig. 10—Clutch and Brake Pedals

Clutch Pedal. Is conveniently located for use by the driver's left foot (fig. 10). It is used to engage and disengage the clutch, thereby connecting the engine to or disconnecting it from the transmission and drive line to rear wheels.

The clutch pedal should have ¾ to 1 inch free travel; if less than ¾" adjust free travel (see Clutch Adjustment, page 41).

NOTE: Never drive with the foot resting on the clutch pedal as this produces undue wear on the throwout bearing and other parts.

Brake Pedal. Located to the right of clutch pedal (fig. 10). Depressing this pedal applies the hydraulic service brakes at all four wheels in proportion to the pressure applied on the pedal.

Hand Brake Lever—1-1½ and 2 Ton. Extends up through floor to the right of the gear shift lever with the grip just below the instrument panel (fig. 2). Pulling this lever back applies the rear wheel brakes by means of mechanical linkage entirely independent of the hydraulic system. To release brakes, grip

the two sections of the handle and pull lever back slightly, then move it forward.

Foot Operated Parking Brake Pedal—½ and ¾ Ton. Parking brakes on all ½ and ¾ ton models are pedal operated. The operating pedal (fig. 10) is located to the left of the clutch pedal and pressing down on this pedal applies the rear wheel brakes through mechanical linkage entirely independent of the hydraulic system. To release the brakes a release lever is mounted on the instrument panel.

Gearshift Lever (4-speed Synchro-mesh Transmission). Extends to the left and back from transmission cover dome at center of floor (fig. 2). This lever is used to shift the transmission gears to the desired position. Figure 11 shows the lever knob positions when the transmission is in neutral, reverse and the four forward speeds. To shift the transmission into any of the forward speeds, disengage the clutch, move the lever across neutral to right or left as desired, and then forward or back into gear.

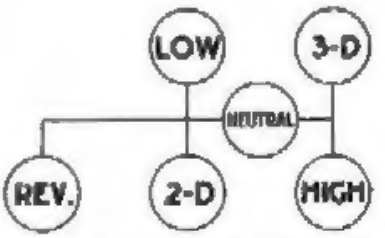

Fig. 11—Four Speed Transmission Shifting Diagram

To shift into reverse, disengage the clutch, move the lever to the left against the spring tension as far as it will go and pull it back into reverse position.

Gearshift Lever (3-speed Synchro-mesh Transmission). Gearshift control on all ½ and ¾ ton trucks with 3-speed transmission is located on the steering column (fig. 1). This mounting at the upper end of the steering column and the gearshift lever are similar to those used on the passenger car. The shift pattern is the same as heretofore except that it is now in a vertical plane instead of a horizontal plane as with the floor mounted gearshift lever.

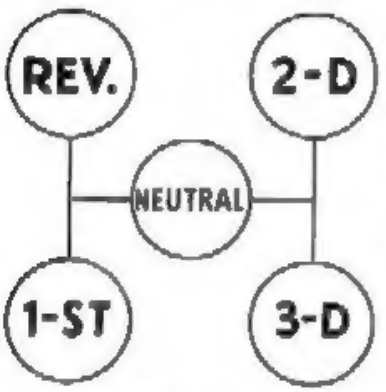

Fig. 12—Three-Speed Transmission Shifting Diagram

Figure 12 shows the gearshift pattern in neutral, reverse and three forward speeds. To shift into any gear position, disengage the clutch, move the shift lever up or down from neutral position and then forward or back into the desired gear.

Cowl Ventilator Control Knob. This knob located below the instrument panel in line with the ignition switch (figs. 1 and 2) is used to open and close the cowl ventilator. When the knob is up toward the instrument panel the ventilator is closed and locked. By pushing the lever down and forward, the desired amount of air circulation can be obtained.

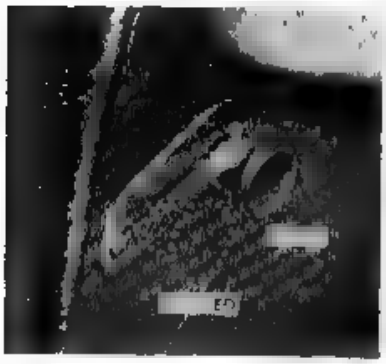

Fig. 13—Cowl Side Ventilator Control Knob

Side Cowl Ventilator Control Knob. This knob extends through the left side cowl trim pad just below the instrument panel (fig. 13). Pushing the knob forward opens the ventilator in the left side of cowl and pulling the knob back closes the ventilator.

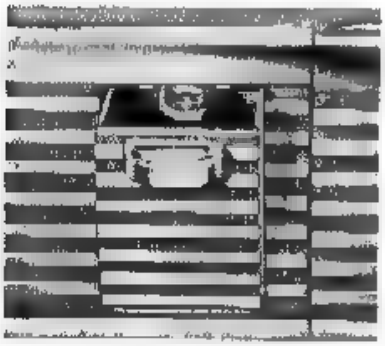

Fig. 14—Ash Tray

Ash Tray. A convenient ash tray is located in the instrument panel to the left of the package compartment (fig. 14). The tray is opened or closed by pulling back or pushing forward on the handle.

Instrument Panel Compartment Lock. The door to the convenient package compartment at the right end of instrument panel is controlled by a lock above the compartment (fig 15). When the lock is unlocked, depressing the lock cylinder releases the latch and the door opens. When the lock is locked the cylinder cannot be depressed. The key used for the door lock and ignition switch is used to lock and unlock the package compartment.

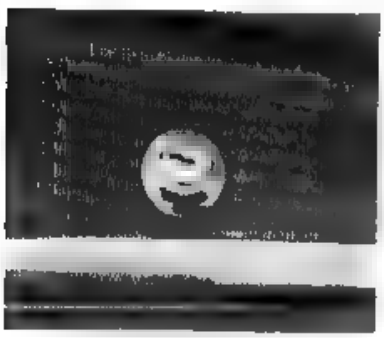

Fig. 15—Package Compartment Lock

Keys. Two identical (octagonal head) keys are furnished with each truck. These keys are used for locking and unlocking the right door, the package compartment and ignition. The key number is stamped on a "knockout" plug in each key (fig. 16). The

dealer and the owner should make a record of this number so that the key can be easily replaced in case it is lost, and then the "knockout" plug should be removed so that unauthorized persons cannot obtain the key number and have a duplicate made.

Fig. 16—Key

Door Locks. Your Chevrolet truck is equipped with theft-resisting door locks which provide a means of locking the cab when the truck is to be left unattended and a means of locking it from the inside.

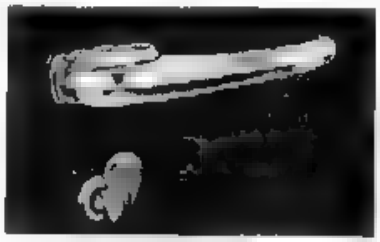

Fig. 17—Door Lock and Key

The right door lock cylinder is located in the door below the door handle. To unlock the right door insert key in lock and turn key clockwise as far as it will go and back to vertical position to remove key (fig. 17). To lock the door insert key in lock and turn key counterclockwise as far as it will go and back to vertical position to remove key.

To lock either door from the inside it is only necessary to move the inside remote control handle up (fig. 18). Pushing down on the inside handle unlocks the door even when it has been locked with a key.

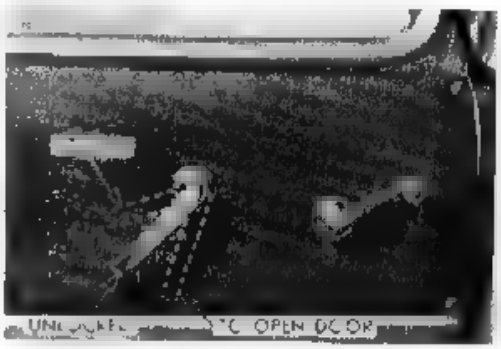

Fig. 18—Door Remote Control and Window Regulator

Window Regulators. The door windows are opened and closed by turning the window regulator handles located near the front upper corner of each door inner panel (fig. 18).

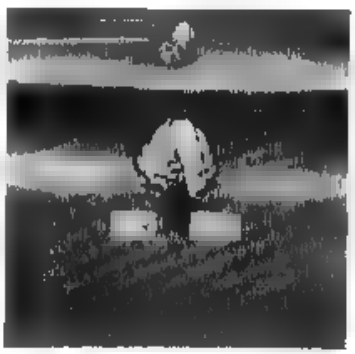

Fig. 19—Windshield Wiper Control Knob

Windshield Wiper. The windshield wiper motor is mounted under the instrument panel and is vacuum operated from the engine. The control knob located on the instrument

panel above the choke button (fig. 19) is used to turn the wiper "on" or "off". Moving the knob to the left turns the wiper on and moving it to the right decreases wiper speed or turns it off completely.

Rear View Mirror. An adjustable rear view mirror is mounted on the left side of cowl in a position so that the driver can get a clear vision along the left side of truck by looking at the mirror through the left door window.

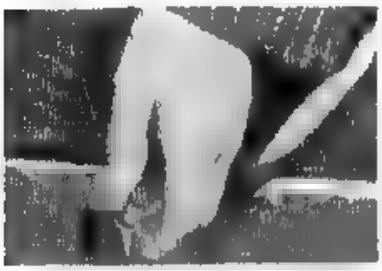

Fig. 20—Seat Adjuster

Seat Adjuster. The entire seat assembly can be moved forward or back to obtain the most comfortable position for the driver. As the seat is moved forward it raises and tips forward and as it is moved back it is lowered to accomodate a tall person.

Moving the adjuster handle forward (fig. 20) releases the seat adjuster lock so that the seat assembly can be moved forward or back as desired. Two coil springs assist in moving the seat forward.

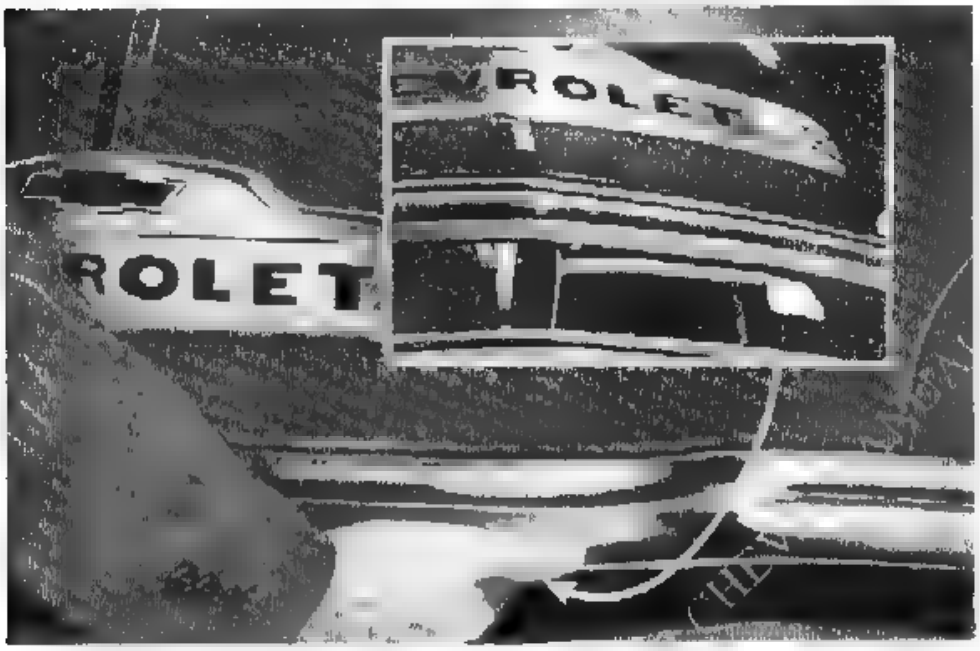

Fig. 21—Hood Lock Release

Hood Lock and Safety Catch. The hood is of the "alligator jaw" type and is held closed by a lock at the front. This lock

can be released by reaching in below the upper grille bar in line with the left end of name plate and pulling the lever forward (fig 21).

The safety catch can then be released by reaching under the nose of hood and pulling forward and up on the catch release (fig. 22).

The hood can then be pushed up to the open position. The spring loaded hood support will assist in raising the hood and hold it open.

To close the hood, lower it to the safety latch position and then push down on nose of hood to lock it.

Fig. 22—Hood Safety Catch Release

PRE-STARTING INSPECTION

The following inspections are not necessary each time the vehicle is started providing the driver has recently driven the vehicle and is certain that attention is not required.

1. Raise the hood, remove the oil gauge rod from right side of crankcase just back of distributor (fig. 23), wipe oil from rod with clean cloth and replace. Remove gauge rod and note level of oil. If down to the "add oil" mark, oil should be added. See "Lubrication Instructions." Install oil gauge rod.

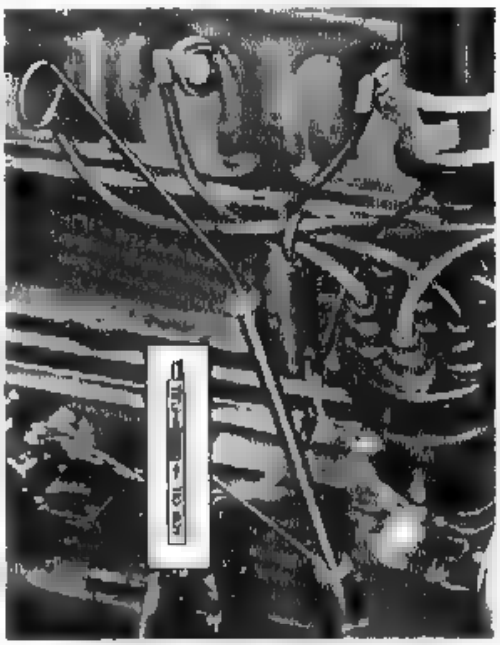

Fig. 23—Oil Gauge Rod

2. Remove radiator cap and check the level of coolant. If coolant is down a quart or more, water or anti-freeze should be added.

3. Check to make sure the tires are properly inflated. Underinflated tires wear rapidly and are subject to road damage.

4. Rear window, windshield and headlights should be cleaned to provide clear vision and good lights.

STARTING THE ENGINE

1. Place ignition key in switch and turn key to vertical position to turn on ignition.

2. Pull hand throttle out about ⅜" to provide an engine speed just above "idle." This is not always necessary in warm weather or with a warm engine, especially if the carburetor is adjusted for a fast idle.

3. Pull choke button out part or all the way depending on climatic conditions. If the engine is warm or in summer weather it is not generally necessary to use the choke at all. In extremely cold weather the choke should be pulled all the way out.

4. Make sure the transmission shift lever is in neutral. Depress the clutch pedal to relieve the load in the transmission.

5. Step on starter pedal to crank engine. **Remove foot from starter pedal as soon as engine starts.** If engine does not start in 15 seconds, release pedal and check to see that the above operations have been completed.

6. As soon as engine starts, push choke button in part way and adjust throttle for smooth idle.

7. Note oil gauge and ammeter readings. Ammeter should show some charge unless engine is idling slowly. Oil gauge should show some pressure. In unusually cold weather the oil gauge needle may go over nearly to 30. If so, run the engine just above idling speed until the pressure drops to around 15 before driving vehicle. The choke and throttle should be pushed in all the way as soon as the engine is sufficiently warmed up.

GEARSHIFTING

Starting the Vehicle

1. Push clutch pedal down to disengage the clutch.

2. Move gearshift lever into low gear position. (If 4-speed transmission see Figure 11, or if 3-speed transmission see Figure 12.)

3. Release the parking brake.

4. Push down slightly on accelerator pedal and at the same time slowly engage the clutch. Continue to depress the accelerator pedal until the vehicle is moving.

Shifting to Higher Gears.

1. Depress clutch pedal and release accelerator at the same time. Move the shift lever into neutral and then to the next higher gear. See shifting diagrams, Figures 11 and 12.

2. Accelerate the engine slightly and slowly engage the clutch.

3. Accelerate the engine to about ⅓ maximum engine speed before shifting to the next higher gear and proceed as outlined above.

Shifting to Reverse (4-speed transmission).

The vehicle must not be moving forward when shifting to reverse.

1. Depress clutch pedal to disengage the clutch.

2. Move shift lever across neutral to left, against the spring tension as far as it will go. Move lever back into reverse (fig. 11).

3. If parking brake is on, release the brake.

4. Push down slightly on accelerator pedal and at the same time slowly engage the clutch. Control the vehicle speed with the accelerator.

Shifting to Reverse (3-speed transmission).

The vehicle should not be moving forward when shifting to reverse.

1. Depress clutch pedal to disengage the clutch.

2. Raise shift lever up across neutral and forward into reverse position. (fig. 12).

3. If parking brake is on, release the brake.

4. Push down slightly on accelerator pedal and at the same time slowly engage the clutch. Control the vehicle speed with the accelerator.

Shifting to Lower Gears

To obtain more pulling power for negotiating bad roads or climbing hills, or to travel at unusually slow speed it is sometimes necessary to shift to lower transmission gears. The shift from high to second with the 3-speed synchro-mesh transmission or from high to third or third to second with the 4-speed synchro-mesh transmission is accomplished in the same manner as up-shifting.

The following procedure should be used when shifting the 3-speed or 4-speed transmission from second to low

1. Disengage the clutch and shift the transmission into neutral while maintaining enough pressure on accelerator to noticeably increase engine speed.

2. Engage clutch and quickly disengage it again.

3. Shift into the next lower gear quickly and then gradually engage clutch.

Shifting Two-Speed Rear Axle.

The new vacuum shift makes this operation comparatively simple as it is unnecessary to declutch while shifting. The control lever for the vacuum shift is located below the instrument panel and to the right of the steering column (fig. 24). Turning this lever also shifts the speedometer adapter to maintain reasonably accurate speedometer and odometer reading regardless of the axle ratio used.

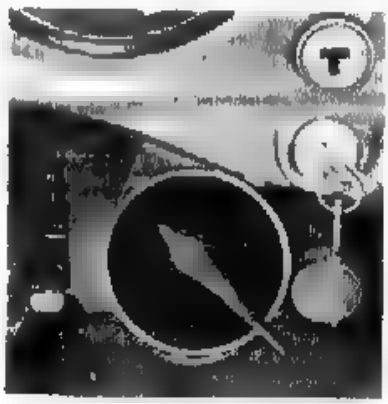

Fig. 24—Two-Speed Axle Shift Control

To shift from low speed to high speed, move control lever to high speed position, as indicated on "DECAL" above speedometer, release accelerator, pause a second to allow engine speed to drop down, then again step down on the accelerator.

To shift from high speed to low speed, move control lever to low speed position, release accelerator and again step down on accelerator.

Stopping the Vehicle.

1. Remove foot from accelerator and place it on brake pedal. Push down on pedal to slow the vehicle down gradually (unless an emergency stop).

2. When the vehicle is nearly stopped, disengage the clutch and shift the transmission to neutral, continuing to apply the brakes until the vehicle is stopped.

3. If vehicle is to stand any length of time set parking brake, release clutch pedal and foot brake.

Starting on an Upgrade.

1. Set the parking brake to hold the vehicle from rolling back.

2. Disengage clutch and shift transmission into low gear.

3. Accelerate the engine and slowly release clutch pedal until clutch starts to engage, then gradually release the parking brake as the clutch engages and the vehicle starts to move forward.

COLD WEATHER OPERATION

Cold weather presents many problems to the motoring public; however, your Chevrolet truck will be equally dependable in cold weather if given a minimum amount of attention.

1. The cooling system must be protected against freezing by the use of anti-freeze solutions (see "Cooling System" and "Anti-Freeze"), or the system must be drained at the lower right corner of radiator and the left rear corner of cylinder block each time the vehicle is to stand any length of time.

2. Light oil should be used in the engine (see "Engine Lubrication").

3. The battery should be kept fully charged to provide the additional power necessary to crank a cold engine and furnish a good spark. A discharged battery will freeze in extremely cold weather which will make battery replacement necessary.

4. The carburetor, fuel pump and fuel tank should be kept free from water which will freeze and restrict fuel flow.

5. The ignition system should be kept in good condition.

6. Assuming that the above items have been given normal attention, the engine should start promptly, even in extremely cold weather, by following this simple procedure:

a. Turn on ignition.
b. Pull hand throttle out about ½".
c. Pull choke button all the way out.
d. Depress foot accelerator slowly a few times.
e. Disengage the clutch.
f. Step on starter pedal.
g. Release starter as soon as engine starts and push choke button in slightly.
h. Regulate hand throttle to provide a fast idle and gradually push choke button in as engine warms up.
i. In abnormally cold weather the engine should be run slightly above idling speed for a few minutes to warm up the oil before driving the truck.

NOTE: Never race the engine until the oil gauge needle will stay around 15.

7 The Chevrolet cooling system is designed to properly cool the engine under most severe operating conditions in hot weather. A thermostat is used in the system to restrict the water circulation until the engine warms up. In very cold weather and under certain driving conditions such as house-to-house delivery where the engine idles a lot or is stopped and started frequently, the production thermostat does not maintain high enough temperature for best economy and performance. In this case a higher temperature thermostat should be used or part of the radiator area covered.

HOT WEATHER OPERATION

Hot weather does not generally present as many problems as cold weather, however, a little special attention will pay dividends in the form of economy and convenience.

1. Check the radiator regularly for sufficient coolant as the rate of evaporation is higher in hot weather.

2. Make sure the fan belt is in good condition and properly adjusted.

3. Keep the radiator area free of bugs and other things that restrict air circulation.

4. Have the water level in the battery checked at 10-day intervals.

5. Starting a cool engine in hot weather does not present a problem and the procedure outlined under "Starting the Engine" should be followed.

A hot engine is easily flooded and may start hard. If the carburetor is flooded proceed as follows:

a. Turn on ignition.

b. Pull hand throttle out about ½".

c. **Do not** pull choke button out or step on accelerator.

d. Depress starter pedal without depressing accelerator.

e. When engine starts, release starter, but do not accelerate engine.

f. Regulate hand throttle for desired engine speed.

If the engine still does not start look for trouble in the fuel pump or ignition systems.

TIRE INFLATION

Tire pressures should be checked at least once a week and inflated according to the following table.

Avoid underinflation to prevent pinched tubes, rim bruises, excessive heat, and irregular or rapid wear.

Avoid overinflation to prevent tire ruptures, hard riding, irregular or rapid wear and reduction of skid resistance.

Inflation Table

6.00-16 4-Ply.....front 26 pounds, rear 28 pounds
6.00-16 6-Ply.....front 30 pounds, rear 36 pounds
6.50-16 6-Ply.....front 30 pounds, rear 36 pounds
6.50-17 6-Ply.....front 30 pounds, rear 36 pounds
7.00-17 6-Ply.....front 40 pounds, rear 45 pounds
7.00-17 8-Ply.....front 40 pounds, rear 55 pounds
7.50-17 8-Ply.....front 40 pounds, rear 60 pounds
5.50-18 4-Ply.....front 28 pounds, rear 32 pounds
6.00-18 6-Ply.....front 30 pounds, rear 36 pounds
7.00-18 8-Ply.....front 40 pounds, rear 55 pounds
8.25-18 10-Ply..... rear 60 pounds
9.00-18 10-Ply ..... rear 65 pounds
6.50-20 6-Ply.....front 40 pounds, rear 50 pounds
7.00-20 8-Ply.....front 40 pounds, rear 55 pounds
7.50-20 8-Ply.....front 40 pounds, rear 60 pounds
8.25-20 10-Ply.....front 40 pounds, rear 65 pounds
6.50-20 8-Ply.....front 50 pounds, rear 65 pounds
7.00-20 10-Ply.....front 55 pounds, rear 70 pounds
7.50-20 10-Ply.....front 55 pounds, rear 75 pounds
8.25-20 12-Ply.....front 60 pounds, rear 75 pounds

15 Inch Tires

Ply	Load per Tire	Tire Pressure
6	1410 pounds 1500 pounds	36 pounds 40 pounds
8	1410 pounds 1500 pounds 1590 pounds 1670 pounds	36 pounds 40 pounds 44 pounds 48 pounds

Tire Rotation. Proper inflation is the prime factor in satisfactory tire life; however, even better tire service can be obtained by rotating the tires every 3,000 to 5,000 miles.

■

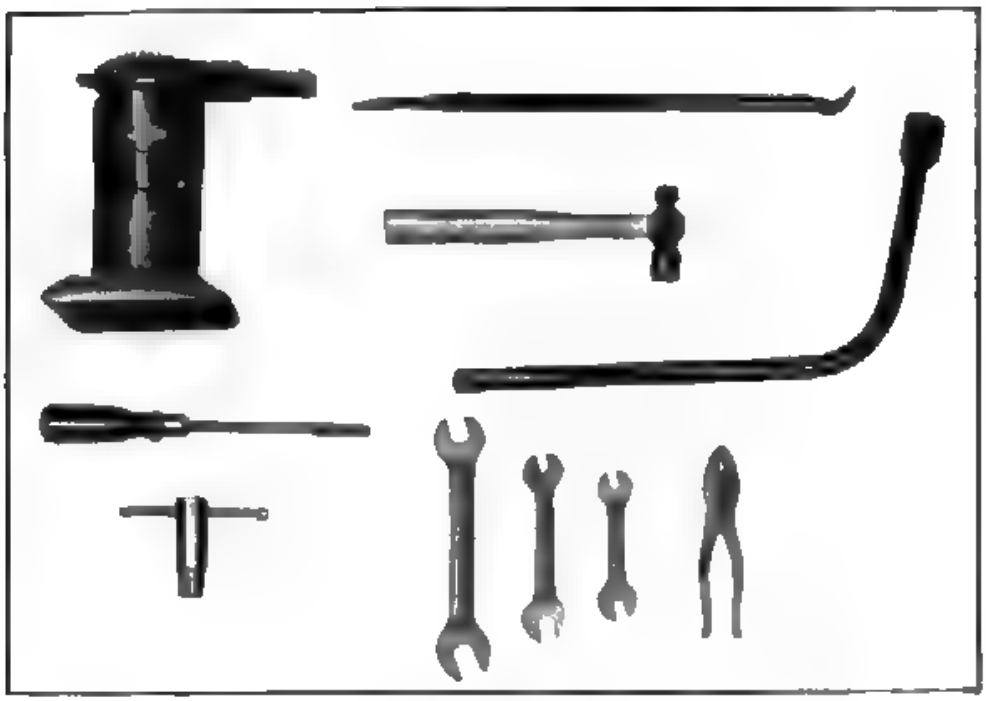

Fig 25—Tool Kit

TOOLS

The Chevrolet truck tool kit provides the tools generally required for changing tires or performing minor road adjustments. Figure 25 shows the tools furnished with the 1½ ton, 2 ton and 2 ton C.O.E. models. Other models have similar tool kits; however, the jack, tire iron and wheel nut wrench will vary depending on models.

A very large tool compartment is provided under the seat of all Chevrolet built bodies (fig. 26).

Fig. 26—Cab Tool Compartment

CHAPTER II

DESCRIPTION, CARE AND MAINTENANCE

PREVENTIVE MAINTENANCE

The following table will indicate some of the things which should be done at regular mileage intervals to assure your receiving the maximum, not only in performance, but in economy.

Mileage	Lubricate Chassis *	Change Oil †	Clean Air Cleaner ‡	Clean Spark Plugs	Cross-Change Tires	Check Shock Absorbers	Tune Engine	Complete Inspection By Dealer	Pack Front Wheel Bearings
500		○							
1000	○								
2000	○	○	○						
3000	○			○	○				
4000	○	○	○						
5000	○					○	○	○	
6000	○	○	○	○	○				
7000	○								
8000	○	○	○						
9000	○			○	○				
10000	○	○	○			○	○	○	○
11000	○								
12000	○	○	○	○	○				
13000	○								
14000	○	○	○						
15000	○			○	○	○	○	○	

*For complete instructions, see Charts on pages 76 to 81.

†For complete recommendations on changing oil and proper grade of oil to use, see pages 63 to 67.

‡Also crankcase ventilator and hydrovac air cleaners when used.

The following operations should be done as indicated:

Period	Check Battery	Check Air in Tires	Change Rear Axle Lubricant	Change Transmission Lubricant	Flush Cooling System	Add Anti-Freeze
Weekly	○	○				
Spring			○	○	○	
Fall			○	○	○	○

ENGINE

Description. The Chevrolet six cylinder valve-in-head truck engines are the prime factor in Chevrolet's outstanding performance and economy. They are designed to give long trouble-free life. Chevrolet's four-way engine lubrication system provides the correct amount of lubrication to all moving parts.

Full length water jackets surrounding all cylinders provide uniform cooling and prevent cylinder distortion which would cause undue wear and poor oil economy.

The water passages between the cylinder block and cylinder head properly direct the flow of water to provide uniform cooling of the engine (fig. 27). Additional cooling of the area around the exhaust valve seats is provided by the use of nozzles to direct the flow of water to these points.

Care. The engine oil level should be checked each time fuel is purchased and oil added when necessary. (See Lubrication Section.) The engine should be inspected occasionally for oil and water leaks and the necessary repairs made. Keep the engine clean externally.

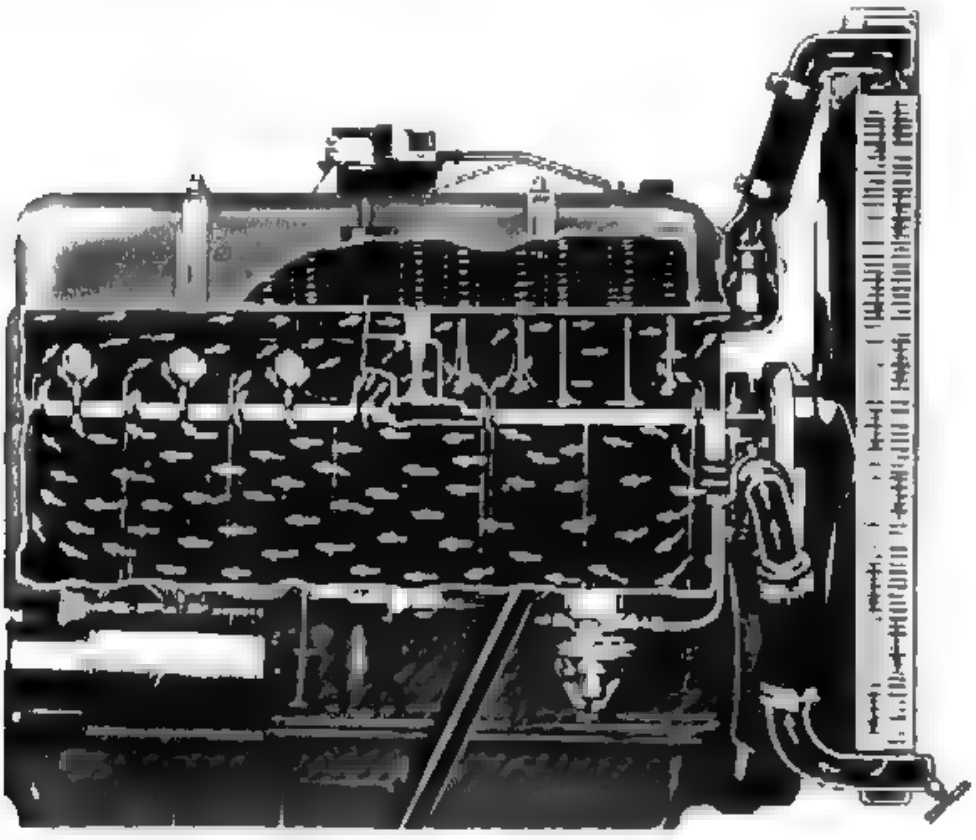

Fig. 27—Water Flow Through Cooling System

Valve Tappet Adjustment. Valve tappet adjustment should be checked when the engine is thoroughly warmed up, preferably when the truck comes in from a run or after the engine has been run at a fast idle for 30 minutes.

1. Remove rocker arm cover attaching nuts and rocker arm cover.

2. Lubricate the valve stems with engine oil to insure free movement of the valves in their guides.

3. Check the clearance between the rocker arms and the valve stems with a feeler gauge (fig. 28). The clearance should be as follows.

	Intake Valves	Exhaust Valves
Normal Operation	.006" to .008"	.013" to .015"
Heavy-Duty Operation ...	010"	.020"

4. When adjustment is necessary loosen the rocker arm adjusting screw lock nut and turn the screw clockwise slightly to decrease clearance and counterclockwise to increase clearance (fig. 28). Tighten lock nut and recheck clearance.

5. Adjust remaining valve clearances in the same manner.

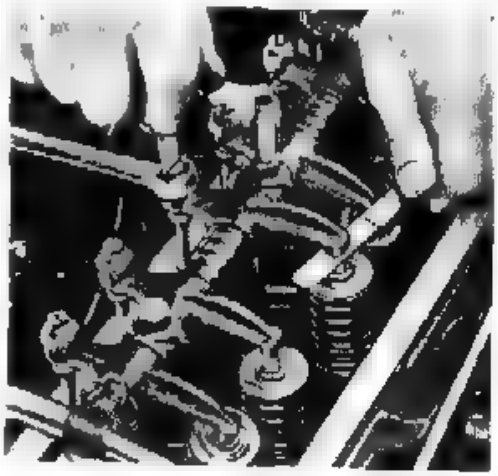

Fig. 28—Valve Tappet Adjustment

6. Install the rocker arm cover using a new gasket. Make sure cover seats properly on gasket and tighten retaining nuts. Check for oil leaks.

Carburetor

Description—Conventional Models. The downdraft carburetor used on all Chevrolet trucks (except Cab-Over-Engine models) contributes materially to Chevrolet's economy and performance It is comparatively simple in design and construction; therefore, requires very little care or attention.

A float controls the fuel level in the carburetor. The fuel admitted to the throat of carburetor is controlled by a series of jets and a throttle controlled metering rod. An accelerating pump is used to provide the richer mixture required for quick acceleration.

Description—Cab-Over-Engine Models. The updraft carburetor used on the Cab-Over-Engine trucks is mounted below the manifold. It is equipped with a vacuum controlled power jet and a throttle operated accelerating pump to aid in providing the desired economy and performance.

Care. Tighten the carburetor to manifold and the manifold to cylinder head stud nuts to prevent air leaks. Keep the carburetor clean externally and have it completely overhauled at regular intervals so that foreign matter in the carburetor and worn parts will not affect correct carburetion.

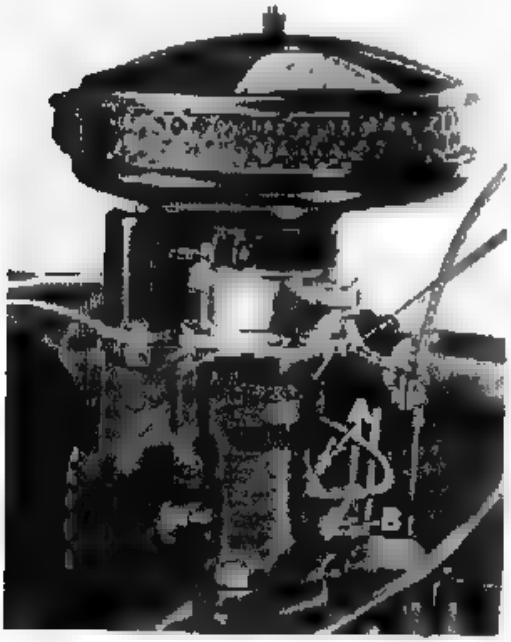

Fig. 29—Downdraft Carburetor Adjustment

Maintenance – Conventional Carburetor. There are but two adjustments on the carburetor, one for idling mixture and the other for idling speed. These adjustments should be made together as changing the adjustment on one affects the other.

Run engine a few minutes to warm it up. Push choke button in all the way. Turn idling mixture adjusting screw "A" (fig. 29) in (clockwise) as far as it will go and then back it off 1¾ turns. Let engine idle at 450 to 500 revolutions per minute and turn idling mixture adjusting screw "A" "in" or "out" as necessary to obtain a smooth idle.

NOTE: If necessary to turn screw "A" more than ½ turn in either direction from the original 1¾ turns open, internal carburetor trouble is indicated.

Before adjusting the idling speed make sure the hand throttle is pushed in all the way and that the accelerator and throttle linkage is free so that throttle lever stop screw "B" (fig. 29) is against the stop. Turn screw "B" in or out to obtain an idling speed of 450 to 500 revolutions per minute. If necessary readjust idling mixture screw "A" as explained above to obtain a smooth idle.

Maintenance—Cab-Over-Engine Carburetor. Warm up engine

to normal operating temperature and make sure choke and throttle buttons are in all the way. Adjust the engine speed to 450 to 500 revolutions per minute by turning the throttle stop screw "B" "in" or "out" as desired (fig. 30).

Turn the idle mixture adjusting screw "A" in or out as necessary to provide a smooth idling mixture. If the carburetor is in good condition the best idling mixture should be obtained with the idling mixture screw between ½ and 1¼ turns open.

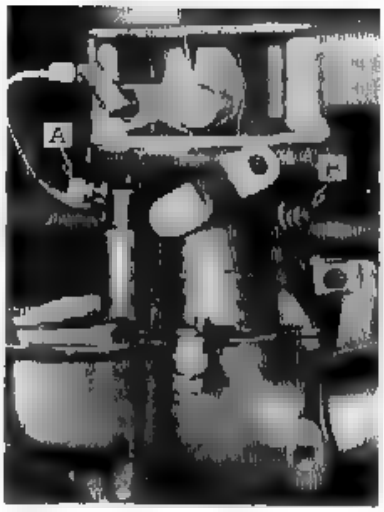

Fig. 30—Updraft Carburetor Adjustment

Air Cleaner

Description—Standard Cleaner. All air taken into the carburetor to mix with the fuel passes through the combined air cleaner and flame arrestor mounted on the carburetor at the air intake. Dust, dirt and other foreign material that would otherwise be taken into the engine is trapped in an oil dampened filter element in the air cleaner This filter element combined with a woven pad in the top of cleaner acts as a flame arrestor in case of engine backfire.

Description—Heavy Duty Cleaner. In certain sections of the country or under certain operating conditions where an unusual amount of dirt is encountered a heavy duty air cleaner of the oil bath type is available. This cleaner is interchangeable with the regular cleaner and may be had as special equipment on a new truck or purchased through parts service. This cleaner will not affect the power or economy of the engine in any way.

The heavy duty cleaner first takes the incoming air down over a pool of oil where most heavy particles of dirt are deposited and then up through an oil moistened filter element to complete the cleaning job.

Care. Keep the air cleaner cover wing nut and the cleaner to carburetor clamp screw tight.

Maintenance—Standard Cleaner. Under ordinary conditions where the truck is driven on hard surface roads, the air cleaner

Fig. 31—Servicing Standard Air Cleaner

should be serviced every 2,000 miles. Under extremely dusty conditions, often encountered on gravel or dirt roads, the air cleaner should be serviced at more frequent intervals.

Servicing is accomplished by removing the cover wing nut, the cover and the filter element (fig. 31) Slush the filter element in cleaning solvent until all foreign matter is removed, let it drain thoroughly and then dip it in clean engine oil. Let all surplus oil drain from element, wipe all dirt from cleaner body and cover, and reassemble cleaner.

Maintenance—Heavy Duty Cleaner. The oil level in the air cleaner reservoir should be checked at regular intervals and sufficient S.A.E. 50 oil in summer and lighter oil in winter adding oil and servicing the cleaner will vary greatly, depending upon operating conditions. Experience will tell when these services should be performed. Servicing of this cleaner, an important operation, must be performed as follows:

Loosen clamp screw and remove air cleaner assembly. Remove wing nut which retains the cover and remove cover and filter element assembly (fig. 32).

Fig. 32—Servicing Heavy Duty Air Cleaner

Empty the oil out of the cleaner reservoir and clean out all accumulated dirt. Wash filter element by slushing it in cleaning solvent until all foreign matter is removed and dry thoroughly. Wash cleaner body in cleaning solvent and wipe dry. Fill the oil reservoir with one pint of oil S.A.E. 50 viscosity in summer and lighter grades in winter.

Reassemble the filter element to the cleaner, being sure that the flange seats properly against the cleaner body. Install

the cover, making sure that the gasket is clean and in good condition. Install and tighten wing nut.

Install the cleaner making sure that the felt pad rests down against the carburetor to assure an air tight seal. Tighten clamp.

Crankcase Filler and Ventilator

All conventional models except ½ ton and C.O.E. with either the 235 cu. in. or 216 cu. in. engine are oil filled through the valve rocker cover and have a plain filler cap. Ventilation is through ventilator tube assembly which is located at the lower right hand side of the cylinder block (fig. 33).

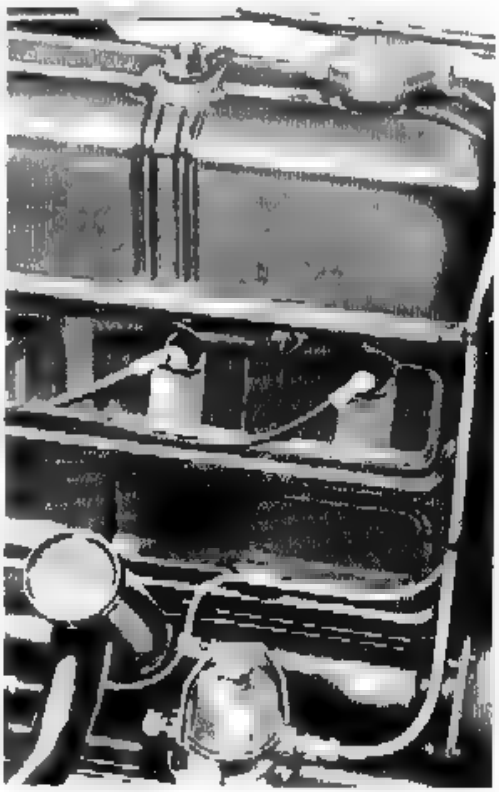

Fig. 33—Filler Cap and Ventilator

All ½ and C.O.E. models are oil filled through a combined oil filler and ventilator tube assembly.

Fuel Pump

Description. The fuel pump is mounted on the right side of engine (fig. 34) and is operated by an eccentric on the engine camshaft. It pumps fuel from the main fuel tank and delivers it to the carburetor.

Fig 34—Fuel Pump

Care. The fuel pump to engine attaching bolts should be kept properly tightened to prevent oil leaks. The fuel pump glass bowl retaining nut should be kept properly tightened. When water or dirt is visible in the bowl it should be removed and cleaned as instructed below.

Fig. 35—Fuel Pump Cleaning

Maintenance. Loosen glass bowl retaining nut and remove glass bowl (fig. 35). Clean all water and dirt from bowl and pump. Remove the gasket and clean the gasket seat. Inspect and if necessary remove and clean filter screen. Install new gasket and the bowl. Tighten retaining nut securely. Start engine and run until fuel pump bowl fills with gasoline. Inspect for leaks.

If the fuel pump does not function properly when the bowl and gasket is known to be seating properly it is advisable to replace the fuel pump or have it serviced by an authorized dealer.

Replacement. Hold the gasoline line fittings in the pump with a wrench and remove the pipe connector nuts. Remove the fuel pump to engine cap screws and remove fuel pump. Remove pipe fittings from pump. Obtain new pump and pump to engine gasket. Install pipe fittings in new pump and install pump on engine using new gasket. Connect gasoline lines, start engine and check for pump operation and possible leaks.

Governor

Description. Governors are standard equipment on the school bus and all two ton trucks. They are also available as special equipment when the truck is ordered, or through the dealer's service department.

The governor is installed between the carburetor and the intake manifold (fig. 36) and automatically governs the speed at which the engine and truck may be operated. The adjusting cap is locked with a seal which should be left in place or a new seal installed when adjusting the

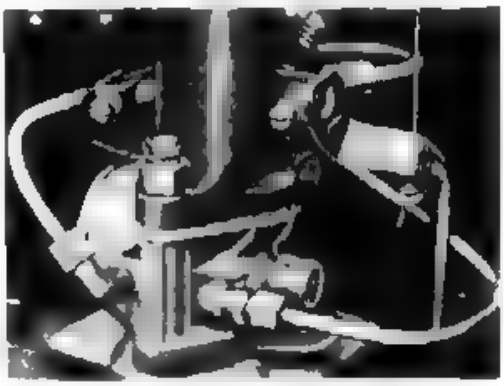

Fig. 36—Governor (in place)

engine speed as this is the only protection against tampering by unauthorized persons.

Care and Maintenance. The attaching bolts should be kept tight and the governor should be kept clean externally. If the governor requires any service attention the truck should be taken to an authorized service station.

Ignition System

Description. The ignition system consists of the ignition switch to open and close the circuit, the coil to induce high voltage, the distributor to make and break the low tension circuit and distribute the high tension current to the correct spark plugs, the polarity reversing switch to reverse the flow of low tension current through the distributor, the spark plugs to provide the spark in the combustion chamber and the necessary wiring (fig. 37). The battery is the source of current for the ignition system when starting the engine or operating at idling speed. The generator furnishes the ignition current at higher speeds.

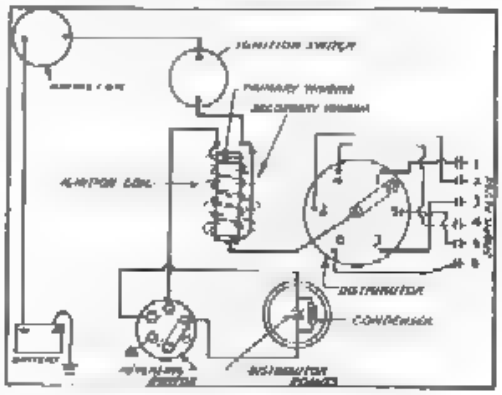

Fig. 37—Ignition Circuit

The distributor mounting provides a means of properly setting the initial ignition timing. The spark advance for various speeds and loads is controlled automatically by governor weights and vacuum control in the distributor. The vacuum control is connected to the carburetor.

The octane selector at the rear of the distributor mounting provides a means of advancing or retarding the ignition timing for the grade of fuel being used.

Chevrolet trucks use 10 millimeter spark plugs. These plugs operate at a more satisfactory temperature as they warm up more quickly, yet run at a lower temperature under severe operating conditions.

The polarity reversing switch is mounted on the starting motor and connected to the starter shift lever by a link. Each time the starter is engaged the switch reverses the direction of current flow across the distributor points which increases the life of distributor points.

Care. The battery and generating system must be kept in good operating condition in order to obtain satisfactory operation of the ignition system. All wiring connections in the ignition circuit should be kept tight and free from dirt and corrosion. Keep the high tension wires free from grease and tight in the distributor cap and coil.

Maintenance—

Distributor Points. Correct distributor point gap is very important. The distributor points are cleaned and adjusted as part of a good engine tune-up. If their condition is questioned, release the distributor cap clamps, remove cap and lift off rotor. Separate the points and inspect them for being pitted or badly burned. Clean the points with a breaker point file. If the points do not clean up with a few strokes of the file they should be replaced.

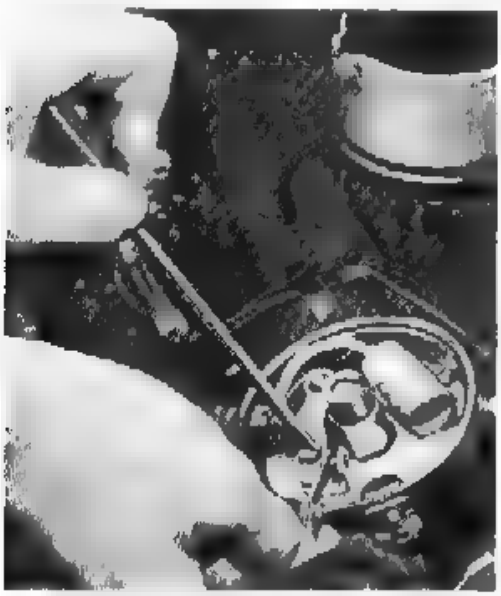

Fig. 38 Adjusting Distributor Points

Point Adjustment. Crank the engine or place transmission in high gear and rock the truck forward enough to place the movable point cam follower on the peak of cam and check the point opening, using a feeler gauge. Correct adjustment is .018". If necessary to adjust the points, loosen the stationary point lock screw and turn the eccentric screw as necessary (fig. 38). Tighten lock screw and recheck point opening. Install rotor, place cap on distributor and turn it until it drops into locking position. Clamp the cap in position.

Point Replacement. In case the points should be replaced, loosen the inside terminal nut at the movable point spring and lift the point out. Remove the stationary point lock screw and remove point and arm. Place the new point and arm in position and install the lock screw. Place the movable point on its shaft and position the spring on the terminal behind lockwasher and tighten nut securely. Adjust points and assemble distributor as explained above.

Reassemble the distributor cap and spark plug wires. Make sure that all terminals of the primary wire at the ignition coil, reversing switch and distributor are clean and tight.

Fig. 39—Octane Selector

Ignition Timing. Set the octane selector at "0" on the scale (fig. 39), and attach a Neon Timing Light to No. 1 spark plug. Start the engine and run it at idling speed. Loosen distributor clamp and rotate the distributor body clockwise or counterclockwise until the steel ball in the flywheel lines up with the pointer on the flywheel housing. Tighten the distributor clamp screw.

Octane Selector. When changing to a grade of fuel with a higher or lower octane rating it may be advisable to advance or retard the spark slightly. Advance the spark to take advantage of higher octane fuel and retard it to prevent excessive detonation with lower octane rated fuels. Note the position of the octane selector scale (fig. 39), loosen the clamp bolt and move the distributor assembly toward advance or retard as desired and tighten the clamp bolt securely. By adjusting the spark in this manner it can be readjusted to the original setting when desired without special ignition timing equipment.

Spark Plugs. Clean the spark plugs thoroughly, using an abrasive type cleaner. If the porcelains are badly glazed or blistered, the spark plugs should be replaced. All spark plugs must be of the same make and number or heat range.

Fig. 40 Setting Spark Plug Gap

Adjust the spark gaps to .040", using a round feeler gauge (fig. 40).

CAUTION: In adjusting the spark plug gap never bend the center electrode which extends through the porcelain center; always make adjustment by bending the side electrode.

Install the spark plugs in the engine, using new gaskets.

Care should be used when install-

ing the 10 millimeter spark plug or the setting of the gap may be upset. If a tension wrench is used when installing the plugs, the proper tension is 15 foot pounds maximum. If a tension wrench is not available, screw each plug in "finger tight" and then with a wrench tighten each plug ½ to ¾ turn beyond this.

Manifold Heat Control Valve. The manifold heat control valve is located on the inside of the exhaust manifold and is operated by the thermostatic spring the center of which is attached to a slot in the valve shaft and the outer end bears against a stop pin on the manifold.

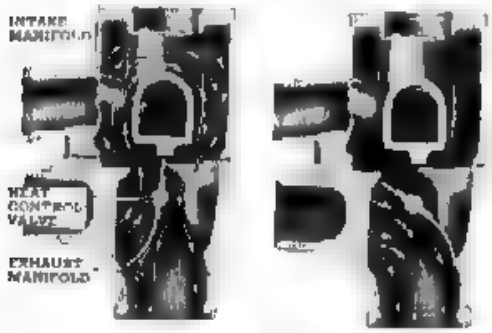

Fig. 41—Manifold Heat Valve

When the engine is cold the valve is in the "heat-on" position as shown in the left half of Figure 41, and the hot exhaust gases are directed against the center of the intake manifold. As the engine warms up, the thermostatic spring moves the valve to the "heat off" position as shown in the right half of Figure 41 and directs the exhaust gases away from the center of the intake manifold.

This thermostatic control results in maintaining the proper temperature of the incoming gases under all operating conditions.

The tension of the thermostatic spring is very important. When it is too tight the heat will not be turned off the intake heat riser as the engine warms up, with the result that the incoming gases will be expanded several times greater in volume than in normal operation and it will be impossible to get a full charge of gas and air into the cylinders. This condition reduces engine power and maximum speed; it will also cause detonation and overheating at higher speeds. Therefore, it is important that the thermostatic spring be wound up just enough to slip its outer end over the anchor pin in the manifold

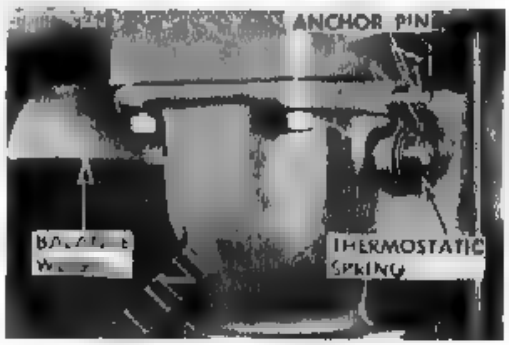

Fig. 42—Manifold Heat Valve Thermostatic Control

and no more (fig. 42). This is approximately ½ turn of the spring from its position when unhooked.

Engine Tune-Up

In order to enjoy the performance and economy which Chevrolet built into your truck engine it must be kept properly tuned. Normally this service should be performed every 5,000 miles. A thorough engine tune-up requires the use of special equipment not generally in the hands of truck owners. For this reason it is advisable to have this service performed by your Chevrolet dealer. However for the benefit of those owners who perform many of their maintenance repair operations we will outline the operations which should be given attention when tuning an engine.

Compression. Compression tests should be made before performing tune-up operations to determine the necessity for internal repairs an engine with poor or uneven compression cannot be successfully tuned.

Spark Plugs. Remove, clean and adjust (page 31).

Battery. Check state of charge by testing specific gravity (page 53).

Battery Cables. Clean and tighten cable terminals.

Distributor. Clean and adjust distributor points. Inspect cap and rotor (page 30).

Ignition Timing. Check and adjust ignition timing (page 31).

Fuel Pump. Clean fuel pump filter bowl and screen (page 28).

Air Cleaner. Clean air cleaner (page 26).

Manifolds. Tighten manifold bolts to guard against intake and exhaust leaks.

Valve Clearance. Check and adjust valve lash to proper clearance (page 23).

Carburetor. Adjust idling speed and mixture (page 24).

Cooling System. Tighten all hose connections. Check fan belt adjustment and the cooling system for coolant leaks.

Road Test. After the engine is tuned the truck should be road tested for performance. During this test the octane selector should be adjusted for the grade of fuel being used. For best performance and economy the octane selector should be set to produce a slight "ping" upon acceleration at wide open throttle.

COOLING SYSTEM

Description. The cooling system consists of the radiator, fan, water pump, thermostat, water passages in cylinder block and cylinder head, and the necessary connections and fittings (fig. 27). The function of the cooling system is to keep the engine at the most efficient operating temperature under all driving conditions.

The permanently lubricated centrifugal type water pump keeps the water circulating; therefore, constantly bringing cooler water to the areas around the combustion and exhaust chambers where most heat is generated. The fan assures a constant flow of air through the radiator and around the engine to aid in cooling the water. The thermostat restricts the flow of water until the engine warms up to normal operating temperature.

Care. The cooling system must be kept in good condition if it is to properly cool the engine under all operating conditions. The radiator cap should be removed and the coolant level checked frequently. If the coolant level is low, water or anti-freeze should be added.

NOTE: The volume of solution in a Chevrolet cooling system expands about one quart when its temperature is changed from 32° to 160°; therefore, the cooling system should be left from one pint to one quart low if filled cold, especially when anti-freeze is used, to prevent loss of solution through the radiator overflow pipe.

The fan belt tension should be checked occasionally and, if necessary, adjusted to provide ¾" up or down movement from normal position at a point midway between fan and generator pulleys (fig. 43).

The system should be thoroughly checked for leaks and all hose connection clamps tightened occasionally.

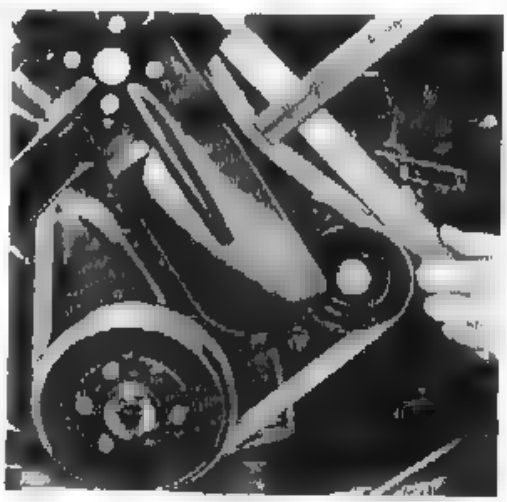

Fig. 43—Fan Belt Adjustment

Twice a year the radiator and cylinder block drain cocks should be opened and all coolant removed. Using a water hose the cooling system should then be thoroughly flushed until the water runs clear. Then close drain cocks and refill cooling system.

The front of the radiator core should be checked occasionally for bugs, leaves, etc., which would restrict air circulation. These can be flushed out from the back side of radiator with an ordinary water hose and city water pressure.

Maintenance—

Flushing. Scale and deposits in the cooling system which will not flush out can generally be removed by using a good cooling system cleaning compound. When using a cleaning compound in the cooling system it is advisable to follow the instructions furnished with the particular brand of compound.

If cooling system cleaning compound will not thoroughly clean the system it is advisable to reverse-flush the system.

Thermostat. A faulty thermostat may cause abnormally high or abnormally low engine temperature. If the condition of the thermostat is questioned it can be removed and tested as follows:

1. Open radiator drain cock and drain out about half the coolant, which will bring the coolant level below the thermostat; close drain cock.
2. Loosen upper hose clamps and remove hose.
3. Remove the two cap screws that attach the water outlet to the thermostat housing. Remove water outlet, gasket and thermostat.
4. Heat a container of water to a temperature 25° above the temperature stamped on the thermostat and place thermostat in the water and see if it opens fully.
5. Place thermostat in water 10° below the temperature stamped on thermostat and see if thermostat fully closes.
6. If the thermostat does not fully open on test in Item 4 or fully close on test in Item 5, it should be replaced.
7. Place thermostat in housing, install water outlet using a new gasket, install attaching screws and tighten them evenly and securely.
8. Inspect the upper hose and if necessary replace it. Install the hose and tighten hose clamps securely.
9. Fill cooling system and check it for leaks.

Fan Belt. When the fan belt becomes damaged it can be replaced as follows:

1. Loosen generator to engine brace clamp bolt at the generator end and push generator assembly toward engine as far as it will go.

2. Work the belt off generator and crankshaft pulleys, push belt toward radiator and turn the fan so that the fan blades will turn through the belt. When the fan blades have all been turned through the loop of belt, the belt can be pulled through between fan hub and radiator core.

3. Thread the new belt over the fan and onto the crankshaft, generator and fan pulleys.

4 Pull the generator away from engine to tighten the belt. Tighten the brace to generator clamp bolt and check for ¾" total up or down movement of belt at a point midway between water pump and generator pulleys (fig. 43). If necessary loosen clamp bolt and move generator slightly to obtain desired belt tension.

Water Pump. If it should be necessary to replace the water pump it may be done as follows:

1. Drain the cooling system and remove the fan belt as instructed above.

2. Remove the cap screws attaching the fan blades to pump, and remove the fan.

3. Loosen clamp and disconnect hose from pump. Disconnect heater hose if one is attached to water pump.

4 Remove the cap screws that attach pump to cylinder block and remove pump.

5. Place new gasket in position, place pulley on pump shaft flange and install pump. Tighten bolts securely.

6. Place fan in position on pulley and install attaching bolts.

7. Connect hose to fitting on pump and if heater is used, transfer heater fitting from old pump and connect heater hose.

8. Install and adjust fan belt as instructed under "Fan Belt Replacement."

9. Fill cooling system and check for leaks.

Anti-Freezing Solutions

In selecting an anti-freezing solution for winter operation the local conditions and the type of service should be considered. The following information is given to assist the truck owner in selecting the anti-freezing solution best suited to meet his own individual driving conditions.

The available commercial materials which may be used for preparing anti-freezing solutions are denatured alcohol, methanol, propanol, ethylene glycol, and distilled glycerine.

Kerosene or other oils, or solutions containing calcium chloride, magnesium chloride, sodium silicate or other inorganic salts, honey, glucose or sugar are not satisfactory for use in the cooling system.

Alcohol. Denatured alcohol and methanol are used extensively for anti-freezing solutions. The various types of alcohol anti-freeze afford protection against freezing and have the advantage of wide distribution and low first cost.

There are, however, two important disadvantages. Alcohol is lost, especially on warm days and on hard driving, and, unless the solution in the radiator is tested periodically and sufficient alcohol added to replace the loss, the engine or radiator, or both, are likely to be damaged by subsequent freezing. The vehicle finish is softened and damaged by contact with alcohol solutions or vapors. Alcohol accidentally spilled on the finish should be flushed off immediately with a large quantity of cold water without wiping or rubbing.

The use of an overflow tank, connected to the overflow pipe of the radiator, serves to condense and trap vapor or liquid that would otherwise be lost. On cooling, the condensate or liquid is returned to the radiator The surge or overflow tank is particularly useful when alcohol anti-freeze is used, and especially in territories where the atmospheric temperature fluctuates over a wide range during the winter months.

GM METHANOL PROTECTION TABLE

Cooling System Capacity In Quarts	Quarts of GM Methanol Required for Anti Freeze Protection at Temperatures shown below								
	2	3	4	5	6	7	8	9	10
15	21°	13°	5°	−5°	−17°	−30°	−45°		
*16	21°	15°	7°	−2°	−12°	−24°	−38°	−52°	
17.5	28°	17°	10°	2°	−7°	−17°	−28°	−41°	−52°
*18.5	23°	18°	12°	5°	−3°	−13°	−23°	−35°	−46°

See Page 90 for cooling system capacity.

*A Hot Water Heater adds about one quart to Standard System Capacity.

Other alcohol and methanol anti-freeze should be used in accordance with instructions issued by the anti-freeze manufacturer.

Ethylene Glycol. Ethylene glycol is, in first cost, more expensive than alcohol. Ethylene glycol anti-freezing solutions have the distinct advantage of possessing a somewhat higher boiling point than alcohol anti-freezing solutions and, consequently, may be operated at a higher temperature, resulting in a more effective performance of the heater.

Ethylene glycol has the further advantage that in a tight system only water is required to replace evaporation losses. However, any solution lost mechanically through leakage or foaming must be replaced by additional new solution. Under ordinary conditions ethylene glycol solutions are not injurious to the vehicle finish.

"GM Ethylene Glycol" is especially treated and compounded for use in the cooling system. Other ethylene glycol preparations are available, but only those containing suitable corrosion inhibitors and compounded for use in automotive cooling systems should be used.

GM ETHYLENE GLYCOL PROTECTION TABLE

Cooling System Capacity In Quarts	Quarts of GM Ethylene Glycol Required for Anti-Freeze Protection at Temperatures shown below							
	3	4	5	6	7	8	9	10
15	16°	8°	0°	−12°	−26°	−43°		
*16	17°	10°	2°	−8°	−19°	−34°	−52°	
17.5	19°	13°	6°	−2°	−12°	−24°	−38°	−52°
*18.5	20°	15°	8°	1°	−8°	−18°	−31°	−46°

See Page 90 for cooling system capacity.

*A Hot Water Heater adds about one quart to Standard System Capacity.

Other ethylene glycol anti-freezes should be diluted in accordance with the instructions issued by the anti-freeze manufacturer.

Glycerine. Radiator glycerine, which is chemically treated, in accordance with the formula approved by the Glycerine Pro-

ducers' Association, to avoid corrosion, is satisfactory for use in the cooling system.

Servicing the Cooling System. Before installing anti-freezing solution, the cooling system should be inspected and serviced for winter operation. The system should be thoroughly cleaned and all loose scale and iron rust removed.

Cylinder head bolts should be tightened to avoid the possibility of anti-freezing solutions leaking into the engine or exhaust gas blowing into the cooling system. Anti-freeze, or water, mixed with engine oil may form sludge, which will interfere with lubrication and, in some cases, may form varnish-like deposits which will cause gumming and sticking of the moving parts.

NOTE: Tightening cylinder head bolts may decrease valve clearance. Check and adjust valves if necessary (See Valve Adjustment).

It may be advisable to install new radiator and heater hose, especially when ethylene glycol or glycerine anti-freezing solutions are used. Ethylene glycol and glycerine have a tendency to shrink rubber, that previously has been swollen by the absorption of water, and leaks may develop.

The water pump seal must be leak tight, not only to avoid loss of liquid, but to prevent air from being drawn into the cooling system. Aeration of the cooling liquid causes foaming and promotes oxidation which may result in serious corrosion.

After the anti-freezing solution has been installed, the entire system, including the hose connections, cylinder head gasket and pump, should be inspected regularly to insure that no leaks have developed.

The use of additional rust preventives, or inhibitors, is not recommended with "GM Anti-Freeze," "GM Ethylene Glycol," or with other anti-freeze preparations that have been chemically treated or compounded for use in automotive cooling systems.

Loss of Anti-Freezing Solutions. Anti-freeze, or water, or both may be lost from the cooling system through leaks, evaporation, boiling, foaming, or expansion. Loss through excessive evaporation or boiling may be caused by impaired circulation or through the use of a high temperature thermostat.

Loss by expansion is a result of overfilling. In the average

cooling system, the anti-freezing solution expands approximately 2 pints on heating from 30° to 160° F., and a corresponding space should be left when adding liquid to the radiator.

A hydrometer test will indicate whether anti-freeze, or water, or both should be added to bring the solution to the proper level and to maintain the desired freezing point.

Testing. Some devices, used for testing anti-freezing solutions, will indicate the correct freezing point only when the test is made at a specific temperature. Other testers, provided with thermometers and tables, indicate the freezing points corresponding to readings made at various temperatures (fig. 44). Disregarding the temperature of the solution, when tested, may cause an error as large as 30° F.

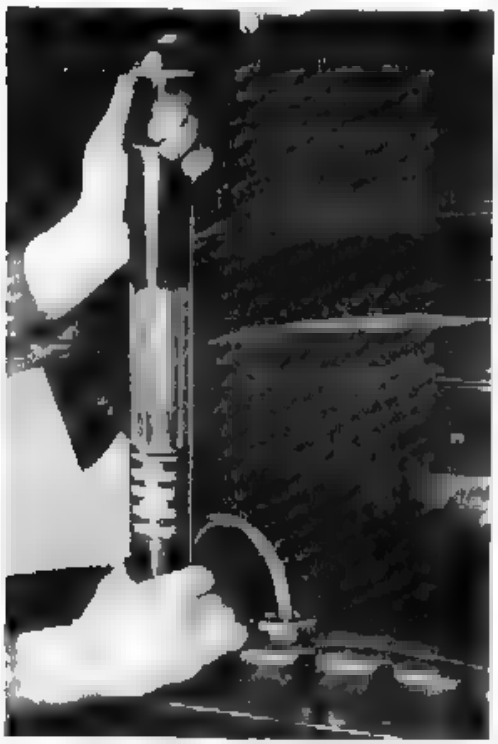

Fig. 44—Anti-Freeze Tester

Some testing devices are made to test only one kind of anti-freezing solution. Others have several scales and may be used for the corresponding kinds of anti-freeze.

The freezing point of a solution containing both alcohol and ethylene glycol cannot be determined accurately by means of a hydrometer.

CLUTCH

Description. The clutch, which provides a means of disconnecting the engine from the transmission while shifting gears, is of the single plate dry disc type. It consists of a pressure plate, cover, disc with facings, diaphragm type spring, throwout bearing, throwout fork and small correlated parts.

When the clutch pedal is depressed the throwout fork pushes the throwout bearing forward, which moves the clutch spring fingers forward, causing the outer rim of the clutch spring to move backward releasing the clutch.

Care. The Chevrolet clutch requires very little care or attention; however, proper use of the clutch will contribute materially to the carefree service it will render.

Never drive with the foot resting on the clutch pedal as this causes constant wear on the clutch throwout bearing and may cause slight clutch slippage which will cause premature failure of the parts.

The clutch pedal free travel should be checked at regular intervals by pushing the clutch pedal down with the fingers to determine the distance it moves before the throwout bearing engages the clutch diaphragm spring. This free travel should be ¾" to 1" (fig. 45). If adjustment is necessary, follow instructions below.

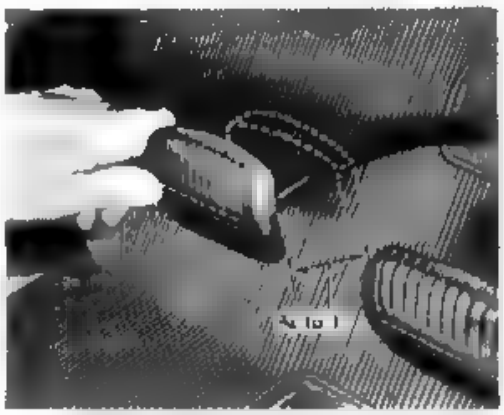

Fig. 45—Clutch Pedal Free Travel

Maintenance—

Clutch Pedal Adjustment. Push the clutch pedal down with the fingers and note the amount of pedal free travel. If this free travel is more than 1" or less than ¾" adjustment should be made.

Loosen the lock nut "A" (fig. 46) on clutch release rod and back off the adjusting nut "B" to increase the pedal free travel, or tighten the adjusting nut "B" to decrease the pedal free travel. When correct travel is obtained, tighten the lock nut "A" and recheck the pedal free travel.

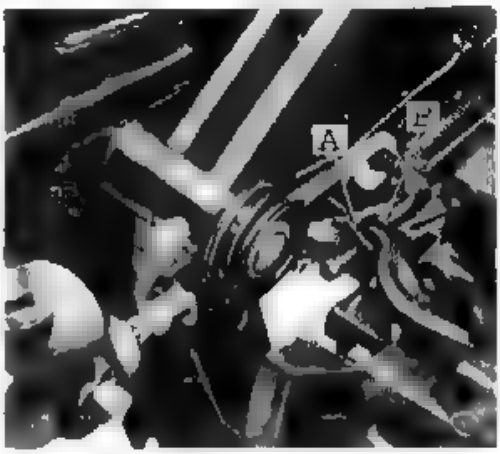

Fig. 46—Clutch Pedal Free Travel Adjustment

TRANSMISSION

Description (3-Speed Transmission). The sturdy synchro-mesh transmission with steering column gear shift control used as standard equipment on the ½ and ¾ ton models provides

three forward speeds and reverse. It is of helical gear type providing unusually quiet operation in all gears.

The gears are carburized for additional strength and long life. The countergear is mounted on roller bearings. Ball bearings are used on the clutch gear and main shaft.

Description (4-speed Transmission). This sturdy synchro-mesh transmission has increased durability and has synchro-mesh action into second, third and fourth speeds using helical gears, affording quieter operation and longer life.

The gears are drop forged steel, heat treated for strength and long life. The clutch gear is supported in the case on a ball bearing and the mainshaft is piloted at the front on roller bearings in the clutch gear and supported in the case at the rear by a large ball bearing. The countershaft is mounted at the front in a roller bearing and at the rear in a large ball bearing.

Care. Chevrolet transmissions require very little care or maintenance. The lubrication level should be checked at regular intervals and lubricant added as necessary. (See instructions in the Lubrication Section.)

Propeller Shaft and Universal Joints

Description. The ½ ton models use one universal joint directly back of the transmission and a torque tube enclosed tubular propeller shaft that is splined to the pinion shaft. The universal joint is of the fully enclosed bushed type taking its lubrication from the transmission.

The ¾ ton models use two propeller shafts and three universal joints. The front universal joint is of the fully inclosed bushed type and is lubricated from the transmission. The front propeller shaft is enclosed in a propeller shaft housing. A propeller shaft bearing support assembly is located near the rear end of this shaft and gives the drive line the necessary support. This bearing support assembly is permanently lubricated at assembly and requires no further lubrication. The center and rear universal joints are of the needle bearing type. They are open joints with a single lubrication fitting to provide lubrication to all trunnion bearings through the drilled trunnion. The rear propeller shaft is of tubular construction.

All other models are fitted with tubular propeller shafts and needle bearing type open universal joints having a single lubrication fitting at each joint and drilled trunnions to distrib-

ute lubricant to all trunnion bearings. The short wheelbase C.O.E. has but one drive shaft and two universal joints, while the long wheelbase schoolbus chassis has three propeller shafts and four universal joints. All other models have two propeller shafts and three universal joints.

Care. When the universal joints are lubricated regularly as instructed in the lubrication section of this manual, they will require very little other care or maintenance. The open type universal joint "U" bolt nuts should be checked occasionally to make sure they are tight.

REAR AXLE

Description (½-Ton). The ½ ton rear axle is of the semi-floating hypoid gear type. The pinion shaft is supported by a large roller bearing at the pinion end and a heavy double row ball bearing at the front end. This ball bearing takes the thrust load. The differential is mounted in the carrier on two barrel type roller bearings. A sturdy two pinion differential is used. The axle shafts are supported on roller bearings in the end of the housing. The shafts are locked in place by "C" locks which fit in grooves on the inner ends of the shafts and a thrust block between the ends of the two shafts.

Description (¾, 1, 1½ and 2 Ton). These models all use a sturdy full floating rear axle having straddle mounted pinion bearings, a four pinion differential and hypoid ring gear and pinion. An adjustable thrust pad is placed back of the ring gear in line with the pinion to avoid any possibility of distortion when starting under heavy loads. The differential is mounted in heavy duty barrel type roller bearings. The bearing caps are piloted to the carrier by sleeve dowels to provide additional rigidity.

Description (2-Speed Axle). The two-speed axle is of the double reduction type having a hypoid ring gear and pinion for the first reduction (fig. 47). The ring gear is mounted on a double reduction shaft having a high speed and a low speed floating reduction pinion that meshes with a respective high and a low speed reduction gear that is bolted to the differential case. An internal splined shifter sleeve fits on splines at the center of the double reduction shaft and can be shifted in either direction to engage splines on the reduction pinions to lock

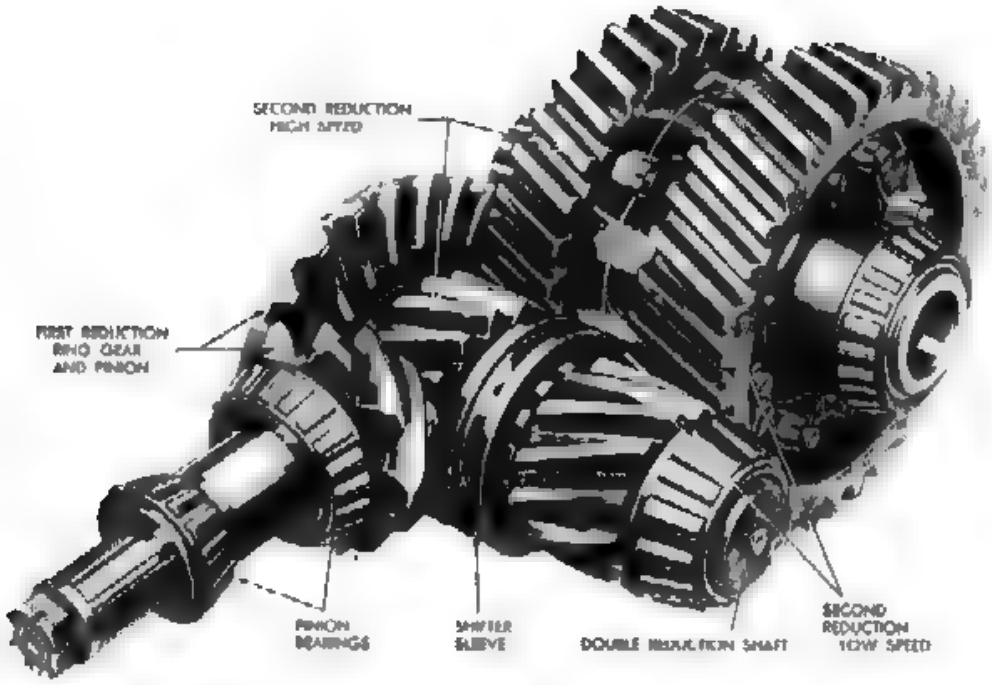

Fig. 47—Two-Speed Axle

one of the pinions to the reduction shaft, thereby providing a positive drive in either high or low gear. The shifting of the shifter sleeve is accomplished by a vacuum shift unit mounted on the left side of differential carrier and controlled by a valve at the lower edge of the instrument panel.

Care. The rear axles used on Chevrolet trucks require very little care or attention. The lubricant level should be checked at each chassis lubrication and the differential carrier and inspection plate bolts should be kept tight.

The axle flange to hub bolts on ¾ and 1 ton trucks should be kept properly tightened. If these bolts are found loose and grease has worked out between hub and axle flange, the safe way to avoid further trouble is to perform the following operations.

1. Remove axle flange bolts, bolt lock, axle shaft and flange gasket

2. Clean the end of hub and axle flange carefully to remove all trace of grease at the hub to axle shaft mating flange.

3. Install a new metal gasket and the axle shaft. **Make sure gasket and mating flanges are clean and dry.**

4. Install the flange bolts and lock washers and tighten bolts to 85 to 90 foot pounds torque.

Fig. 48—Shaft to Hub Attachment

On all 1½ and 2 ton trucks the axle shaft is spline attached to the wheel hub (fig. 48). External splines on the outer diameter of the shaft flange mesh with internal teeth in the hub. The shaft is retained in the hub by a hub cap. Should leakage occur simply remove hub cap, clean mating faces, install new gasket, replace hub cap and tighten hub cap retaining bolts securely.

Rear Wheels and Bearings

Description. All models are equipped with demountable steel disc wheels. They are held securely on the axle flange or hub flange with special bolts and nuts. All models except the half ton have the wheel hub mounted on the outer end of axle housing with two large barrel type roller bearings. An adjusting nut which screws onto the end of axle housing provides a means of adjusting the bearings. The ½ ton semi-floating axle has the wheel bolted directly to the axle flange, the bearing is in the outer end of the axle housing and rides on a special race on the axle shaft just back of the axle flange.

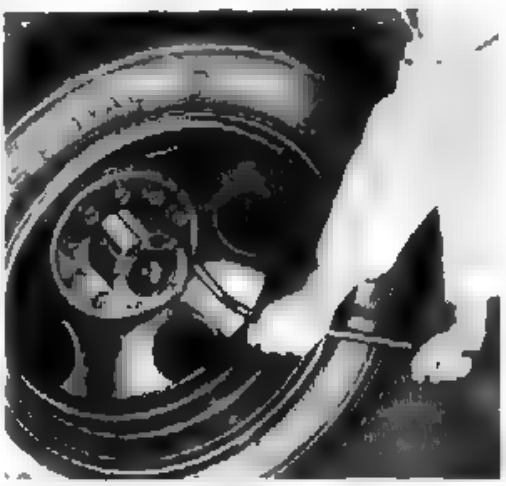

Fig. 49—Tightening Wheel Nuts

Care. Keep the wheel to hub or axle flange bolt nuts securely tightened (fig. 49). In case the hub flange or wheel disc should become coated with oil or grease the wheel should be removed and all grease removed with cleaning solvent. Reinstall wheel and tighten bolts securely.

FRONT AXLE

Description. All Chevrolet trucks use what is known as a reverse Elliott type "I" beam axle. The drop forged steel "I"

beam has the spring seats forged integral with the "I" beam.

Floating bushings are used between the kingpin and knuckle on the ½ ton models. Other models have the bushings pressed into the steering knuckles. The steering arms bolt to the knuckles.

Ball type bearings are used to mount the front hub on the spindle of all models except the 2-ton heavy duty, 1½-ton school bus and C.O.E. models which use barrel type roller bearings.

Care. The front axle and its connections should be checked regularly for wear or looseness, especially for loose spring to axle "U" bolts, loose steering tie rod and drag link joints and for bent tie rod, drag link or steering arms.

Alignment. To provide easy steering, normal tire life and road stability and to prevent such troubles as shimmy, wander, tramp and tendency to lead to right or left, it is necessary to maintain correct front end alignment.

Since considerable expensive special equipment is required to properly check and adjust all the factors of front end alignment, it is advisable to take the truck to your Chevrolet dealer for this service, when the front end alignment requires attention.

Front Wheels and Bearings

Description—All Chevrolet trucks are equipped with demountable steel disc front wheels. The ½ ton and ¾-ton use one-piece drop center wheels, while the other models use a removable tire lock ring. The wheels are attached to the hub with special bolts and nuts. The hubs on the 1½ ton school bus and 2 ton heavy duty models are mounted on the spindle with barrel type roller bearings. The hubs on all other models are mounted on ball bearings.

Fig. 50—Adjusting Front Wheel Bearings

Care. Keep the wheel to hub mounting bolt nuts tight and the wheel bearings properly adjusted as instructed below.

Wheel Bearing Adjustment. 1. Jack up front end of vehicle and remove wheel and tire assembly. Remove hub cap and dust cap or the plate from end of hub. Remove cotter pin from end of spindle.

2. Using an 8" wrench (never larger) and applying a steady force with one hand, pull the adjusting nut up tight while rotating the drum to make sure all parts are correctly seated (fig. 50).

3. Back off the adjusting nut one-half castellation or one-twelfth turn.

4. If the cotter pin will enter the horizontal or vertical hole in the spindle, install it; however, if a castellation in the nut does not line up with either hole, back the nut off slightly until the nearest castellation lines up with a hole in the spindle.

5. Spin the drum to make sure that it rolls freely. Install and properly lock the cotter pin by spreading the end and bending it around. Install the hub plate or dust cap and hub cap. Replace wheel and tire assembly and remove jack.

STEERING GEAR

Description. The modern, heavy-duty recirculating ball type steering gear used on Chevrolet trucks is designed for easy steering and road stability. The steering gear reduction is 26.24 to 1 on all trucks except 1½-ton school bus and 2-ton models, these have a reduction ratio of 27.76.

The wormshaft is supported in the steering gear housing on barrel type roller bearings. The ball nut is mounted on the worm with two sets of recirculating ball bearings.

The design of the steering gear makes it possible to adjust all backlash from the steering gear when the wheels are in a straight ahead position. When the wheels are turned in either direction there will be slight backlash. This construction makes it possible to make adjustments to compensate for wear in the straight ahead position without causing a bind when turning to right or left. These construction features contribute materially to easy steering and long steering gear life.

Care. Check the steering gear to frame bolts regularly to make sure they are tight. Keep the pitman arm to pitman shaft nut tight. Keep the housing side and end covers tight to prevent grease leak and steering looseness. Add lubricant when necessary.

Steering Gear Adjustment. Steering gear adjustment is a very important operation and requires the use of a special checking scale; therefore, it is suggested that this service be performed by your dealer.

BRAKE SYSTEM

Description. The self energizing type braking system used on all Chevrolet trucks combines hydraulically operated service brakes with mechanically operated parking brakes. Fundamentally, the braking systems used on all truck models are the same; however, they vary somewhat in size and braking area due to the difference in vehicle weight and load capacity.

The hydraulic service brakes provide brake action at all four wheels, while the mechanical parking brakes operate on the rear wheels only.

The service brake system consists of the brake pedal, main cylinder, brake lines to all wheels, wheel cylinder, shoes with linings and brake drums. The parking brake consists of the brake lever or pedal, pull rods, cables and the toggle at the wheels which actuates the brake shoes.

The hydraulic system must be kept full of fluid at all times in order to function properly. The main cylinder includes a reservoir for a reserve supply of fluid. This automatically keeps the system full of fluid as long as there is a reserve supply in the reservoir. Should the reservoir become empty or the hydraulic system be opened at any point, air will enter the system and affect the efficiency of the brakes. When this occurs the hydraulic system must be bled. Since this operation requires the use of special equipment the vehicle should be taken to your Chevrolet dealer.

NOTE: Always Use G. M. Super No. 9 Brake Fluid in the Hydraulic Brake System.

Care. The Chevrolet braking system requires very little care; however, the system should be checked occasionally for indications of fluid leak. If leaks are found the necessary repairs should be made at once.

The main cylinder inspection plug in the left side of floor board should be removed and the top of main cylinder cleaned carefully (fig. 51). The filler cap should be removed and if the fluid is low in the reservoir, it should be filled to a point about ¼″ from the top of reservoir with G. M. Super No. 9 Hydraulic Brake fluid. Check the filler cap to see that the vent holes

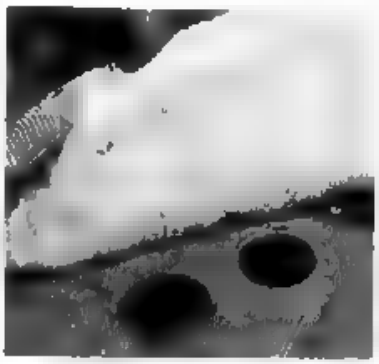

Fig. 51—Hydraulic Brake Main Cylinder Location

are open. Install filler cap and inspection plug.

Maintenance—

Service Brake Adjustment (½- and ¾-Ton Trucks). When the brake pedal can be pushed nearly to the toe-board, brake adjustment is needed.

1. Raise the car and place stand jacks front and rear so that all four wheels rotate freely.

2. Disconnect the parking brake cables at the cross shaft lever. This precaution should be taken to eliminate the possibility of the brake shoes dragging the drum due to misadjustment of the parking brakes.

3. Remove the adjusting hole covers and insert a screwdriver through the adjusting hole and engage the teeth on the adjusting cover of the wheel cylinder (fig. 52). Turn the adjusting cover in a clockwise direction looking at the end of the cylinder until the shoes cause a slight drag on the brake drum.

Fig. 52—Adjusting ½ and ¾ Ton Brakes

4. When the "drag" condition is reached, turn the adjusting cover in the opposite direction four (4) notches. Repeat this operation on each shoe in each brake.

NOTE: The backing-off of the adjusting cover the specified number of notches will be indicated by a faint click of the cover lock spring as the cover is turned. This backing-off of the adjusting cover moves the brake shoe away from the drum to insure proper running clearance of the shoes in the drum.

5. Connect parking brake cables and adjust. (See Parking Brake Adjustment.)

Fig. 53—Adjusting Heavy Duty Truck Rear Brakes

Brake Adjustment (1-, 1½- and 2-Ton Trucks) The adjustment of the front brakes on the 1-ton, 1½-ton and 2-ton vehicles is the same as for ½- and ¾-ton trucks.

To adjust the rear brakes on these trucks use a ⅝" open end wrench to turn the adjusting pinion.

1. Turn the adjusting pinion (fig. 53), in a clockwise direction until the shoe causes a slight drag on the brake drum.

2. Turn the adjusting pinion back in the opposite direction ⅔ of a turn to provide running clearance. Repeat this operation on each shoe in each brake.

Parking Brake Adjustment. The parking brake adjustment should be checked after each service brake adjustment.

1. Jack up rear wheels and set the parking brake lever in the fully released position.

2. Loosen the check nuts at the cable ends, or remove the adjusting clevis to pull rod clevis pins and loosen lock nut, depending on truck model.

3. Pull the cables out of the conduits by hand until a positive stop is felt. Hold the cable in this position and turn the check nuts to remove all slack from cable or turn the clevis until it is the correct length for the pin to pass through clevis and cable end.

4. Apply the parking brake enough to produce a drag at the wheels and check for equal drag at each wheel. If one wheel has more drag than the other, loosen the parking brake adjustment of the tight wheel until they are equal. Release brake lever and check to see that the brakes do not drag.

5. Tighten the adjusting nuts to maintain correct adjustment or install clevis pin cotter pins and tighten lock nuts on models using this type connection.

Hydrovac Power Brakes

Description. The Hydrovac is standard equipment on the 2-ton and 1½-ton special models and is also available as optional equipment on standard 1½-ton models. This self-contained unit is connected in the hydraulic brake system between the brake main cylinder and the lines leading to the wheel cylinders.

The Hydrovac (fig. 54) consists of three operating units built into one assembly; namely, the control valve assembly, the vacuum power cylinder and the brake hydraulic cylinder.

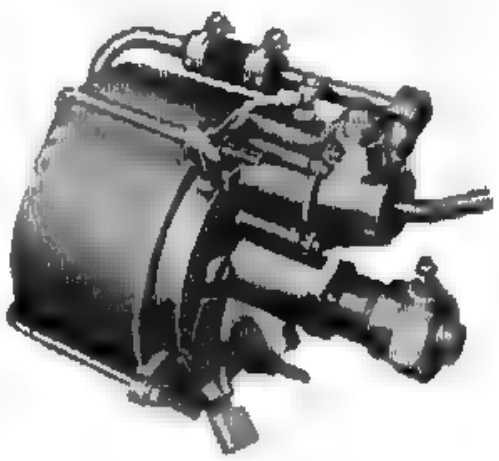

Fig. 54—Hydrovac

With this system the engine vacuum is used to greatly increase the hydraulic pressure to the brake wheel cylinders. This provides unusual braking efficiency with comparatively light pedal pressure.

Care. This unit does not have any external moving parts or linkage and is properly sealed against dust and water; therefore, it will give unusual service with very little care or maintenance.

The vacuum connections between the engine and the hydrovac should be checked for damage and the connections tightened occasionally. The hydrovac air cleaner should be removed, disassembled, cleaned and oiled at least twice a year and more frequently when driving on dusty roads.

SPRINGS AND SHACKLES

Front Springs and Shackles

Description. All Chevrolet trucks use leaf type front springs. The ½- and ¾-ton use 38″ springs, 1¾″ wide. The thickness of the leaves vary between the two models. All other models use 40″ springs, 2″ wide with from 7 to 9 leaves. All models except the Cab-Over-Engine have a threaded bushing and pin type shackle at the front and a plain bushing and eye bolt at the rear hanger. The C.O.E. models have the shackle at the rear and the permanent hanger at the front.

Care. The spring to "I" beam U-bolts should be checked occasionally to make sure they are tight. The shackles and hanger bolts should be checked for proper tightness. The shackles and hanger bushings should be lubricated as instructed in the Lubrication Section.

Rear Springs and Shackles

Description. All models have leaf type rear springs with the shackle at the rear end of spring; however, the length, width and thickness of the springs vary depending on model and capacity of the truck. The ½-ton uses a threaded type shackle while all other models use a clevis type shackle and heavy shackle pins to attach the spring to shackle and hanger.

Some models use a two-stage type rear spring to provide better riding qualities when lightly loaded and proper support for heavy loads. Some models that are to be subjected to heavy

loads are equipped with auxiliary springs which mount above the regular springs and contact brackets on the frame member when handling heavy loads.

Care. Keep the spring to axle "U" bolts and the shackle bolts properly tightened. Lubricate the shackles and hangers according to instructions in the Lubrication Section.

ELECTRICAL SYSTEM

General Description. The electrical system consists of the following units—generator, combined voltage and current regulator, starting motor, storage battery, distributor, ignition lock, ignition coil, ammeter, gasoline gauge, horn, lamps, switches, wiring and miscellaneous parts.

The ignition switch, coil, distributor and other miscellaneous parts making up the "Ignition System" were previously covered.

Battery

Description. A 6-volt 100 ampere hour storage battery is located under the floor board on the right side of the vehicle on all models except the school bus which has a 125 ampere hour battery under the hood.

Care. To assure long carefree battery service it is suggested that you register the battery with your dealer and take the vehicle to him to have the battery serviced. If this cannot be done the following services should be performed at least once in two weeks.

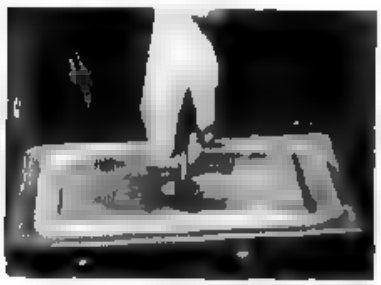

Fig. 55—Removing Battery Inspection Plate

1. Turn the right rear corner of floor mat up out of the way, turn the battery inspection plate handle counterclockwise (fig. 55) and remove inspection plate.

2. Remove filler caps from all three cells and add distilled water to bring the solution ¼" above the plates in each cell.

NOTE: Avoid getting battery acid on clothing or other fabrics.

3. Reinstall and tighten filler caps, place battery inspection

plate in position and turn the handle to lock it securely. Place floor mat in position.

In freezing weather the vehicle must be driven after adding water to properly mix it with the electrolyte and prevent freezing. It is also important to keep the battery in a fully charged condition in cold weather as a discharged battery will freeze at a little below the freezing point of water (32 degrees F.).

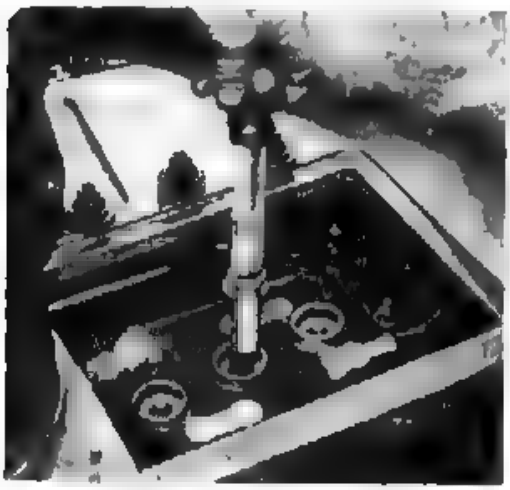

Fig. 56—Testing Battery with Hydrometer

The state of charge in the battery should be checked regularly. Your Chevrolet dealer will gladly perform this service; however, if it is inconvenient to take the truck to the dealer the state of charge in the battery can be checked by using a battery hydrometer as shown in Fig. 56. The hydrometer reading of a fully charged battery will be from 1.275 to 1.300.

Battery Cables

Care. The battery cable terminals must be kept clean and tight. Loose or corroded terminals cause hard starting and discharged batteries. When corrosion appears on the terminals they should be cleaned in a solution of baking soda and water or ammonia and water. After cleaning, the top of the battery should be flushed off with clear water. To reduce the tendency of the terminals to corrode coat them with petrolatum.

Starter

Description. The starting motor is designed to incorporate a manual shift drive mechanism which assures positive engagement of the starting motor pinion with the flywheel until the engine is started. This is of particular benefit when starting a cold engine, as the starting motor will continue to crank the engine as long as the driver depresses the starter pedal.

Care. The starting motor requires little care other than lubrication of the front bearing on those starters having an oil cup.

Starters that do not have an oil cup use a pre-lubricated bearing that does not require additional lubrication.

Maintenance—

Keep the terminal nut tight on the starting switch. Check the switch mounting screws and starting motor bolts periodically to make sure they remain tight. Remove the commutator cover band every 5,000 miles and blow out any dust. If the commutator is dirty it may be cleaned with a strip of No. 00 sandpaper. **Do not use emery cloth.**

Generating System

Description. The generating system consists of the generator, voltage and current regulator, ammeter and necessary wiring.

The ammeter indicates whether current is being supplied to or removed from the battery.

The generator used on all Chevrolet trucks has sufficient capacity to supply all regularly used accessories and keep the battery fully charged providing the system is in good condition.

The generator output is controlled by the combined current and voltage regulator which also contains the circuit breaker. The circuit breaker points close when the generator voltage is higher than the battery voltage so that current can flow to the battery, and open when the generator voltage is lower than the battery voltage to prevent the battery from discharging through the generator.

The current regulator protects the generator by preventing the generator output from exceeding 34 to 36 amperes.

The voltage regulator protects the battery and electrical system by preventing the generator voltage from exceeding 7.2 to 7.4 volts.

Care. The connections in the entire generating circuit must be kept tight and free from corrosion or anything that will cause high resistance in the circuit The generator should be lubricated according to instructions in the Lubrication Section.

Maintenance—

The maintenance services on the generating system, especially the voltage and current regulator, require the use of spe-

cial equipment not generally available to the vehicle owner.

NOTE: Never tamper with the voltage and current regulator unless you have special testing equipment and are trained to do this kind of work.

Remove the commutator cover band every 5,000 miles and blow out any dust. If the commutator is dirty it may be cleaned with a strip of No. 00 sandpaper. **Do not use emery cloth.**

If the brushes are badly worn or the generator does not respond to commutator cleaning it is best to have your Chevrolet dealer make the necessary tests and repairs.

Lamps

Description. All Chevrolet trucks are equipped with "Sealed Beam" headlight units in which the light source, the reflector, lens and gasket are all assembled in a securely sealed unit. Figure 57 shows the component parts of the light. With this

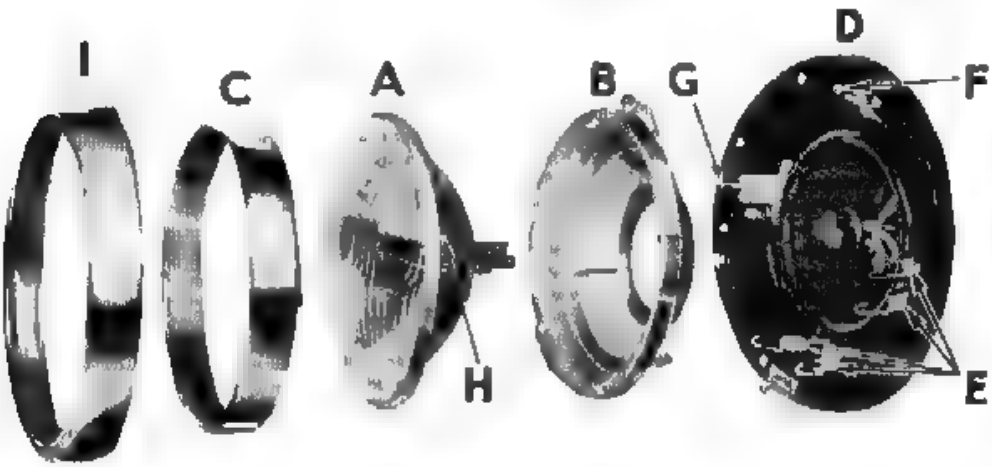

Fig. 57—Headlamp Parts

A. Sealed Beam Unit
B. Sub Body.
C. Retainer Ring
D. Lamp Housing
E. Coil Springs (4)
F. Vertical Adjustment Screw
G. Horizontal Adjustment Screw
H. Locating Lugs
I. Headlamp Rim

sealed unit dirt or moisture cannot enter the assembly; therefore, they retain their light reflecting ability indefinitely.

Maintenance—

Sealed beam units can be replaced as follows.

1. Loosen clamp screw and remove headlamp door rim by

Fig. 58—Removing Headlamp Rim

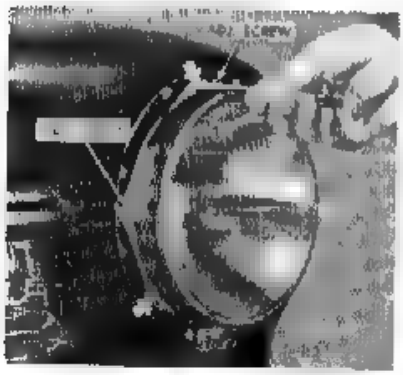

Fig. 59—Removing Sealed Beam Retaining Ring Screws

Fig. 60—Removing Sealed Beam Retaining Ring

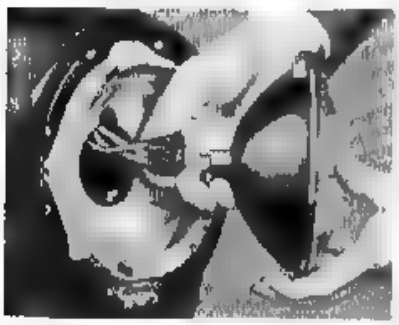

Fig. 61—Disconnecting Sealed Beam Plug Connector

pulling it out at bottom and unhooking the top (fig. 58).

2. Remove the three screws holding the sealed beam retainer ring (fig. 59).

NOTE: Do not disturb the headlamp aiming screws on the top and left side of unit (fig. 59).

3. Pull the sealed beam and retainer ring away from lamp body and remove retainer ring (fig. 60).

4. Disconnect wiring plug from sealed beam unit (fig. 61).

5. Connect wiring plug to new sealed beam unit, place the retaining ring around unit, push the assembly into place and install the three attaching screws.

6. Hook the headlamp rim at the top and pull it down into place. Install and tighten the clamp screw.

Proper aiming of these powerful lights is most important to assure sufficient illumination of the highway without blinding other motorists. When light aiming is necessary it is advisable to contact your Chevrolet dealer who has special equipment for this purpose.

The parking, stop and tail lamp bulbs may be reached by removing the rim clamp screws, rim and lens. Push the bulb in slightly and turn it counterclockwise as far as possible and pull it out of socket. Push new bulb into place and turn it clockwise to lock it. Install rim and lens.

Lighting Switch

The lighting switch is mounted near the left end of instrument pan-

el. All current entering the lighting switch passes through a 30 ampere thermal circuit breaker. If all lights fail to operate look for trouble at this circuit breaker, the light switch or the wiring between the battery and light switch. Each individual circuit except instrument and dome light circuits are protected by fuses located in a fuse box.

Fuse Box

Description. The fuse box is mounted on the left side of cowl (fig. 62). Separate 20-ampere fuses are used for the upper headlight beam, lower headlight beam, parking lights, tail light and stop light circuits.

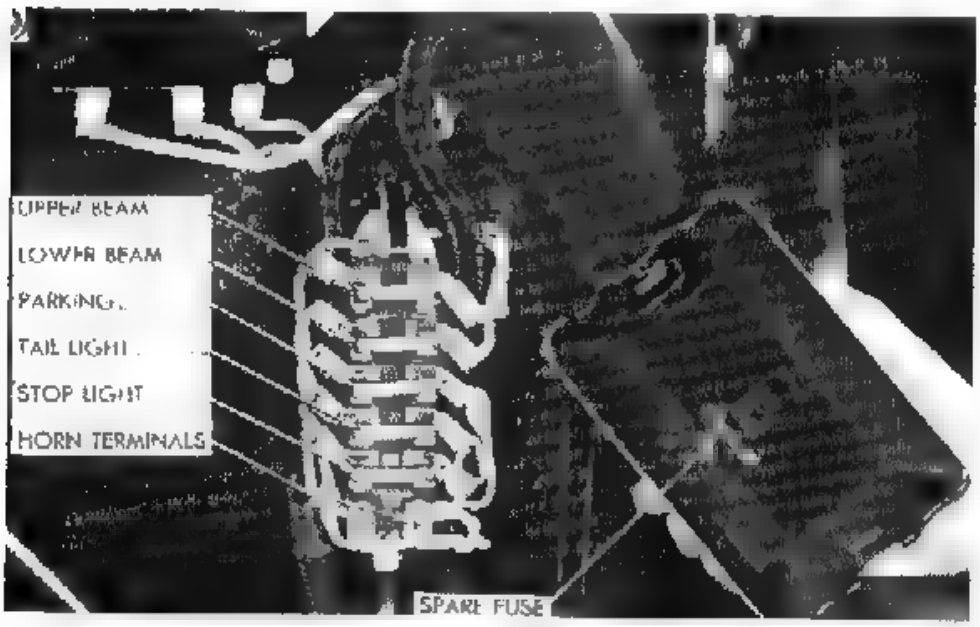

Fig. 62—Fuse Box

This fuse box also acts as a junction block between the chassis wiring harness and the body wiring harness.

The fuse box cover is held in place by a spring clip at each end. A spare fuse clip containing one fuse is located inside the cover.

Fuse Replacement. In case all lights in any one circuit should fail to operate it is advisable to check the fuse in that circuit. See Figure 62. Release the cover clips and remove the cover. Pull the fuse straight out of the fuse clips and replace it with a fuse known to be in good condition. Place the cover in position and hook the cover clips. In case the new fuse burns

out as soon as the circuit is tested, the circuit is likely to be shorted in which case it is advisable to contact your Chevrolet dealer.

NOTE: Always carry a spare fuse in the clip in fuse box cover.

TIRES

Description. Chevrolet commercial vehicles are equipped with synthetic rubber tires and tubes. It is important that these tires be properly inflated to assure normal tire life. See "Tire Inflation Taple," page 19.

It is important to have your truck equipped with tires having a rated capacity to handle the anticipated loads as overloading tires seriously affect their life.

Maintenance—

Mounting Synthetic Tubes.

1. Before installing tube in tire, clean inside of casing thoroughly.

2. Insert tube in tire and inflate until it is nearly rounded out.

3. Inspect rim for rust scale and bent flanges—clean rust scale and straighten flanges.

4. Using a brush or cloth swab, apply a solution of neutral vegetable oil soap to the inside and outside of tire beads and also to the rim side of tube. Do not allow soap solution to run down into tire.

5 When mounting tire and tube on drop center rim, follow the standard procedure. Be sure tire is centered on rim so that beads are out of rim well before inflating. Do not allow tire to hang loosely on wheel while inflating.

6. Center valve and pull it firmly against the rim. Hold in this position and inflate until beads are firmly seated on rim against flanges.

7. Completely deflate tire by removing valve core.

8. Reinflate tire to recommended pressure.

(Caution: When tube and flap are not properly lubricated and mounted, they will be stretched thin in the tire bead and rim region. This will cause premature failure.)

½ Ton Tire Changing. The drop center wheels used on ½ ton models has been so universally used on cars and light trucks

for so many years that it can be assumed that all motorists are familiar with the procedure for changing tires; however, the special information pertaining to "synthetic tubes" above should be carefully followed.

¾ Ton Tire Changing—Demounting.

1. Completely deflate tire by removing valve core.

2. Support wheel disc (retaining ring side up) on three or four wood blocks (2" x 4" block 3" or 4" long) to keep tire off the floor.

3. Loosen the tire bead from its seat in the rim by driving the flat end of the tire iron between the bead and the rim. Hold the iron down on the side wall to avoid cutting the bead, and make sure the iron is driven in until it strikes the rim. Apply downward pressure on the tire iron to force the bead away from the retaining ring. Continue around the tire until it is loosened all the way around and the retaining ring can be moved from its support on the gutter diameter and into the gutter well.

4. Insert curved end of tire iron in the square notch in the retaining ring and pry out and up while holding the ring down into the gutter at the opposite side (fig. 63). Continue this operation until the cutaway portion of the retaining ring nearest the tire iron spans the outside diameter of the rim gutter.

Fig. 63—¾ Ton Tire Removal

5. Continue to pry the remainder of this half of the retaining ring from the gutter by moving progressively toward the other cutaway portion in the ring.

6. The remainder of the retaining ring can now be pried out of the gutter and the ring removed.

7. Turn the wheel over and place it on the blocks with the ring side down, then force tire from wheel rim. Remove tire flap and tube from tire.

¾ Ton Tire Changing—Mounting.

1. Remove all rust scale from the rim and retainer ring.

2. Insert tube in tire and inflate until tube is nearly rounded out.

3. Lubricate tire beads, rim side of tube and both sides of flap with a solution of neutral vegetable oil soap or RuGlyde rubber lubricant. Insert flap in tire.

4. Place the wheel (rim flange down) on three or four small blocks.

5. Place tire on rim with the valve in line with the valve hole in the rim. Insert valve through hole, then work the tire onto the rim until the outer bead clears the rim gutter.

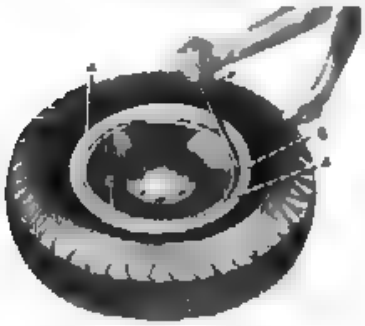

Fig. 64—¾ Ton Tire Installation

6. Place the retainer ring on the wheel rim and start the side of the ring opposite the square notch into the rim gutter, at "C" (fig. 64) making sure the two cutaway portions of the ring rest on the sides of the wheel at "A". Hold the first portion of the ring in the rim gutter and pry the remaining portion over the wheel rim. To pry the last portion into place, insert the tire iron in the notch "B", thus putting tension on the ring, and tap the ring with a hammer until it drops into place.

7. Inflate slowly to not more than 10 pounds pressure. See that the retainer ring is properly seated on its support in the rim gutter (tapping lightly with a hammer will help seat it firmly), and make sure that the tire bead rests evenly against the rim.

8 Turn the tire and wheel over with the ring down, or lean it against a wall with the ring side in. Completely deflate tire by removing valve core and then reinflate to recommended pressure.

1, 1½ and 2 Ton Tire Changing—Demounting.

1. Completely deflate tire by removing the valve core.

2. Using a hammer tap around the side ring progressively to move it in toward the center of the rim until it clears the clamp ring (fig. 65).

3. Starting at the split in the clamp ring, raise its end out of the

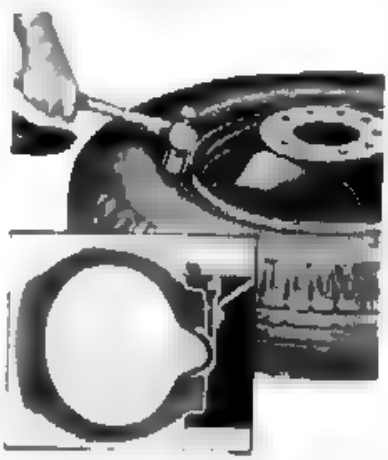

Fig. 65—Releasing Tire Clamp Ring

rim gutter using a screwdriver and the tire iron (fig. 66). Then remove the clamp ring by prying it out of the gutter with the tire iron, moving progressively around the rim (fig. 67).

4. Drive the curved end of the tire iron in between the side ring and the tire bead (fig. 68). Then pry down on the opposite end of tire iron to move the tire bead away from the side ring flange (fig. 69). Continue the foregoing operation progressively around the tire until the side ring is removed. In some cases it may be necessary to work around the tire a couple of times.

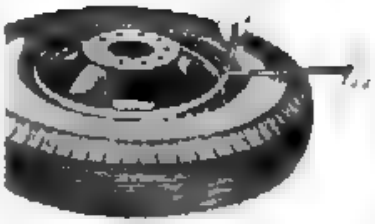

Fig. 66—Raising End of Clamp Ring

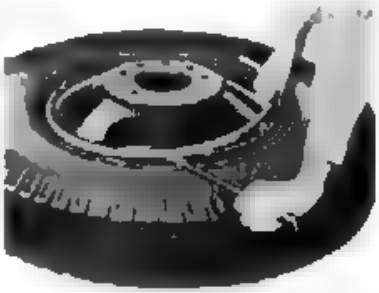

Fig 67—Removing Tire Clamp Ring

NOTE: The tire bead seat on the side ring is slightly tapered; this design makes removal of the ring much easier.

5. Push the valve stem up inside the tire to prevent damage while removing the tire. The tire may be removed from the rim by following the procedure described in Item 4.

Fig. 68—Starting Side Ring Removal

1, 1½ and 2 Ton Tire Changing—Mounting.

1. Remove all rust scale from the rim, side ring and clamp ring.

2. Insert tube in tire and inflate until tube is nearly rounded out.

3. Lubricate tire beads, rim side of tube and both sides of flap with a solution of neutral vegetable oil soap or RuGlyde rubber lubricant. Insert flap in tire.

4. Place tire on rim with valve in line with the valve hole in rim. Insert valve

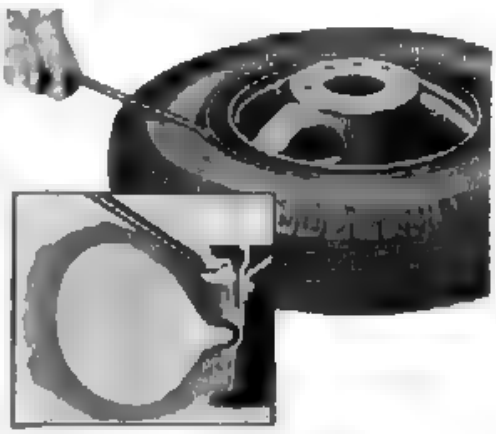

Fig. 69—Removing Side Ring

Fig. 70—Installing Clamp Ring

through hole; then work tire on to rim.

5. Place side ring into position on tire and rim; then press the side ring into tire and onto the rim using the tapered end of tire iron until the clamp ring gutter is exposed. Insert end of clamp ring in gutter and work progressively around the tire until the clamp ring is seated in the gutter (fig. 70).

6. Inflate tire slowly while checking to see that the side ring moves out over the clamp ring locking it into the gutter. Completely deflate the tire and then re-inflate to recommended pressure.

CHAPTER III

LUBRICATION

Your Chevrolet dealer is equipped to render complete lubrication service. We recommend that you take advantage of his modern equipment and trained men.

Lubricants are much cheaper than repair bills, and should be applied regularly if you are to secure a maximum of useful service from your truck. It is, consequently, important that the proper grade of lubricants be used in accordance with a definite schedule.

In your selection of the proper brand of oil, it is desirable to consider the reputation of the refiner or marketer. He is responsible for the quality of his product and his reputation is the truck owner's best indication of quality.

ENGINE

Your use of the proper engine oil is one of great importance in obtaining maximum performance and satisfaction from your truck.

It is imperative that the recommended light oils be used in the engine during the "breaking-in" period.

Light oils assure a better "breaking-in" of the engine, as they assure ease of starting; prompt flow of a sufficient quantity of oil to the bearings; less friction between moving parts; less wear of moving parts, etc.

Types of Oils. Crankcase oils in service, unless protected against oxidation, may form sludge and varnish and under some conditions corrosive acids.

To minimize the formation of these harmful decomposition products and to supply the type of oil best suited for the different operating conditions, the oil industry markets several types of crankcase oils. These types are defined by the General Committee, Division of Marketing, of the American Petroleum Institute as follows:

> **"REGULAR TYPE—This term designates motor oil generally suitable for use in internal combustion engines under moderate operating conditions.**
>
> **"PREMIUM TYPE—This term designates motor oil having the oxidation stability and bearing corrosion preventive properties necessary to make it generally suitable for use in internal combustion engines where operating conditions are more severe than regular duty.**
>
> **"HEAVY-DUTY TYPE—This term designates motor oil having the oxidation stability, bearing corrosion preventive properties, and detergent dispersant characteristics necessary to make it generally suitable for use in both high speed Diesel and gasoline engines under heavy-duty service conditions."**

Regular, Premium and Heavy-Duty Type Oils. The Regular Type or straight mineral motor oils, which may be used under moderate or light driving conditions in passenger-car engines, may be used in light commercial vehicle engines only under very light service conditions.

The Premium and Heavy-Duty Type motor oils are recommended for use in heavy-duty commercial service. Both types offer resistance to oxidation. The Heavy-Duty Type motor oils, containing detergent compounds, may be used where detergent dispersant characteristics are desired.

For maximum protection of your Chevrolet engine under all driving conditions, it is recommended that Premium or Heavy-Duty Type motor oils be used.

S.A.E. Viscosity Numbers. The viscosity of a lubricant is simply a measure of its body or fluidity.

The S.A.E. viscosity numbers constitute a classification of lubricants in terms of viscosity or fluidity, but with no reference to any other characteristics or properties.

The S.A.E. viscosity numbers have been adopted by practically all oil companies, and no difficulty should be experienced in obtaining the proper viscosity grade in the different types of motor oils to meet seasonal requirements.

Viscosity Grades of Oil. The following viscosity grades of oil are recommended for use in the engine of your truck.

Viscosity Number	Seconds Viscosity (Saybolt Universal) 0° F. Min.	0° F. Max.	130° F. Min.	130° F. Max.
10-W (*)	5,000	10,000	...	...
20-W (**)	10,000	40,000	...	...
S.A.E. 20	.....	.....	120	185
S.A.E. 30	.....	.....	185	255

*Sub-zero pour test.
**Zero pour test.

The oils with the lower S.A.E. numbers are lighter and flow more readily than do the oils with the high numbers.

Lubrication—First 500 Miles. The crankcase of your engine, as delivered to you, is filled with 10-W oil.

Use this oil during the first 500 miles.

At the end of the first 500 miles, drain the crankcase—when hot and refill to the proper level with the recommended oil.

Lubrication—After 500 Miles. After the first 500 miles the crankcase oil should be selected to give the best performance under your individual climatic and driving conditions.

Fall—Winter—Spring. During the colder months of the year, an oil which will permit easy starting at the lowest atmospheric temperature likely to be encountered should be used.

When the crankcase is drained and refilled, the crankcase oil should be selected not on the basis of the existing temperature at the time of the change, but on the lowest temperature anticipated for the period during which the oil is to be used.

Unless the crankcase oil is selected on the basis of viscosity or fluidity at the anticipated temperature, difficulty in starting will be experienced at each sudden drop in temperature.

The viscosity grade of crankcase oil will, therefore, depend upon the climatic conditions under which your truck is operated. The grades best suited for use in your engine at the various temperatures are shown in the following table:

If you anticipate that the lowest atmospheric temperature will be:	Use the grade indicated·
Not lower than 32° F.	20-W or S.A.E. 20
As low as plus 10° F.	20-W
As low as minus 10° F.	10-W
Below minus 10° F.	10-W plus 10% Kerosene

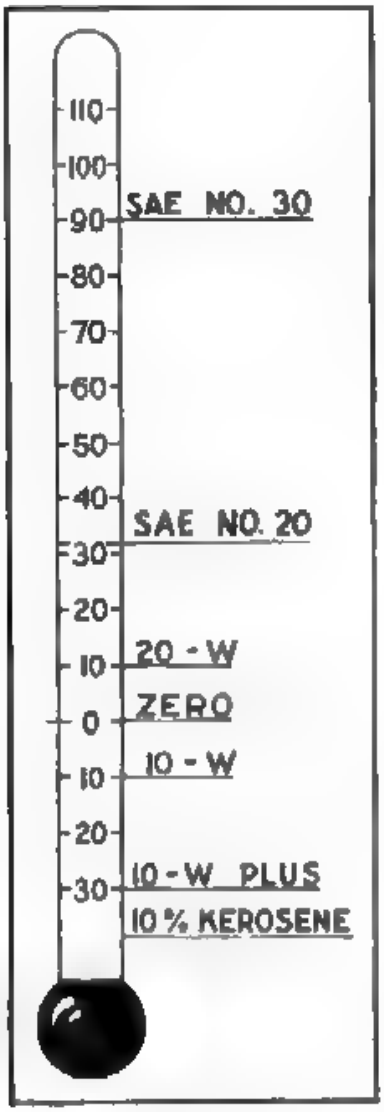

Fig. 71—Oil Thermometer

10-W oil plus 10% kerosene is recommended only for those territories where the temperature falls below 10 degrees below Zero for protracted periods.

Figure 71 shows the data in the above table as it would appear on a thermometer—the lowest temperature at which the indicated grades of oil will permit easy starting.

> **NOTE: When in doubt use the lighter grade of oil.)**
>
> **We recommend the use of 20-W rather than S.A.E. 20 if you anticipate temperatures to drop to freezing.**

Summer. The use of 20-W or S.A.E. 20 oils during the summer months will permit better all around performance than will the heavier body oils, with no appreciable increase in oil consumption.

If S.A.E. 20 or 20-W oil is not available, S.A.E. 30 oil may be used if it is expected that the average prevailing daylight temperature will consistently be above 90° F.

Fig. 72—Oil Gauge Rod in Pan

Maintaining Oil Level. The Oil Gauge Rod (fig. 72) is marked "Full" or "Add Oil." These notations have broad arrows pointing to the level lines.

The oil level should be maintained between the two lines; neither going above the "Full" line nor under the "Add Oil" line.

Check the oil level frequently and add oil when necessary. Always be sure the crankcase is full before starting on a long drive.

Oil Gauge. When starting a cold engine, it will be noted that the oil gauge on the instrument panel will register a high oil pressure. As the engine warms up, the pressure will drop until it reaches a point where changes to higher speeds will raise the pressure very little, if at all.

If the oil pressure registers abnormally high after the engine is thoroughly warmed up, an inspection should be made to ascertain if the oil lines and passages are "plugged" up.

When to Change Crankcase Oil. Oils have been greatly improved, driving conditions have changed, and improvements in engines, such as the crankcase ventilating system, have greatly lengthened the life of good lubricating oils. However, to insure continuation of best performance, low maintenance cost and long engine life, it is necessary to change the crankcase oil whenever it becomes contaminated with harmful foreign materials. Under normal driving conditions draining the crankcase and replacing with fresh oil every 2000 to 3000 miles is recommended.

Under the driving conditions described in the following paragraphs, it may become necessary to drain the crankcase oil more frequently.

Frequent long runs at high speed, or continuous driving with heavy loads, with the resultant high engine operating temperatures, may oxidize the oil and may result in the formation of sludge and varnish. While no definite drain periods can be recommended under these conditions, they should be more frequent than under normal driving conditions.

Driving over dusty roads or through dust storms introduces abrasive material into the engine. Carburetor air cleaners decrease the amount of dust that may enter the crankcase. The frequency of draining depends upon severity of dust conditions and no definite draining periods can be recommended, but should be more frequent than under normal driving conditions.

Short runs in cold weather, such as city driving, and excessive idling, do not permit thorough warming up of the engine and water may accumulate in the crankcase from condensation of moisture produced by the burning of the fuel. Water, in the crankcase, may freeze and interfere with proper oil circulation. It also promotes rusting and may cause clogging of oil screens and passages. Under normal driving conditions this water is removed by the crankcase ventilator. But if water accumulates it should be removed by draining the crankcase as frequently as may be required.

It is always advisable to let the engine reach normal operating temperature before draining the crankcase. The benefit of draining is, to a large extent, lost if the crankcase is drained when the engine is cold as some of the suspended foreign material will cling to the sides of the oil pan and will not drain out readily with the slower moving oil.

Crankcase Dilution

Probably the most serious phase of engine oil deterioration is that of crankcase dilution, which is the thinning of the oil by fuel vapors leaking by the pistons and rings and mixing with the oil.

Leakage of fuel, or fuel vapors, into the oil pan mostly occurs during the "warming-up" period, when the fuel is not thoroughly vaporized and burned.

Automatic Control Devices to Minimize Crankcase Dilution. Your Chevrolet engine is equipped with automatic devices which aid greatly in minimizing the danger of crankcase dilution.

Rapid warming up of the engine is aided by the thermostatic water temperature control, which automatically prevents circulation of the water in the cooling system until it reaches a predetermined temperature.

Thermostatic heat control on the exhaust manifold, during

the warming-up period, automatically directs the hot exhaust gases against the center of the intake manifold, greatly aiding the proper vaporization of the fuel.

Sparing use of the choke reduces danger of raw, or unvaporized fuel entering the combustion chamber and leaking into the oil reservoir.

An efficient crankcase ventilating system drives off fuel vapors and aids in the evaporization of the raw fuel and water which may find its way into the oil reservoir.

Control by Truck Owner Under Abnormal Conditions. Ordinarily the above automatic control devices will minimize, or eliminate, the danger of crankcase dilution.

However, there are abnormal conditions of service when the truck owner must aid in the control of crankcase dilution.

Short runs in cold weather, such as city driving, and excessive idling, do not permit the thorough warming up of the engine nor the efficient operation of automatic control devices. It is recommended that the oil be changed more often when the truck is subjected to this type of operation.

Poor mechanical condition of the engine, such as scored cylinders, poor ring fit, "sloppy" or loose pistons, faulty valves, and poor ignition will increase crankcase dilution. Keep your truck in good mechanical condition.

Poor fuels which contain portions hard to ignite and slow to burn will increase crankcase dilution. Use good fuel.

Water in Crankcase. Serious lubrication troubles may result in cold weather due to an accumulation of water in the oil pan. This condition is as a rule little understood by the truck owner. To demonstrate the chief cause of water in the oil pan, hold a piece of cold metal near the end of the exhaust pipe of the engine and note the rapid condensation and collection of drops of water on it. The exhaust gases are charged with water vapor and the moment these gases strike a cold surface, they will condense, forming drops of water.

A slight amount of these gases pass the pistons and rings, even under the most favorable conditions, and cause the formation of water in the oil pan, in a greater or lesser degree, until the engine becomes warm. When the engine becomes thoroughly warm, the crankcase will no longer act as a condenser

and all of these gases will pass out through the crankcase ventilator system.

Short runs in cold weather, such as city driving, will aggravate this condition.

Corrosion. Practically all present-day engine fuel contains a small amount of sulphur which, in the state in which it is found, is harmless; but this sulphur on burning, forms certain gases, a small portion of which is likely to leak past the pistons and rings and reacting with water, when present in the crankcase, form corrosive acids. The more sulphur in the fuel, the greater the danger from this type of corrosion. This is a condition which we cannot wholly avoid, but it may be reduced to a minimum by proper care of the engine.

As long as the gases and the internal walls of the crankcase are hot enough to keep water vapor from condensing, no harm will result; but when an engine is run in low temperatures, moisture will collect and unite with the gases formed by combustion; thus, acid will be formed and is likely to cause serious etching or pitting. This etching, pitting or corrosion, when using fuel containing considerable sulphur, manifests itself in excessively rapid wear on piston pins, camshaft bearings and other moving parts of the engine, oftentimes causing the owner to blame the truck manufacturer or the lubricating oil when in reality the trouble may be traced back to the character of fuel used, or a condition of the engine, such as excessive blow-bys or improper carburetor adjustment.

Water Pump

The permanently sealed ball bearing water pump does not require lubrication by the truck owner.

Carburetor Accelerating Pump

(Except Cab-Over-Engine)

Every 5,000 miles remove the dust cover and saturate the felt ring on the carburetor pump lever shaft with light oil, or engine oil.

Starting Motor

Every 1,000 miles put a few drops of light oil, or engine oil, in the oil cup. Starting Motors with aluminum end frame have an oil-less bearing and are not equipped with oil cup.

Generator

Every 1,000 miles put a few drops of a light oil, or engine oil, in the 2 oil cups. Do not "over-oil" as excessive oil will flow into the commutator causing it to become "gummed up" or sticky.

Distributor

The distributor is equipped with a lubricant cup. Fill this cup with chassis lubricant, or equivalent soft, smooth lubricant and turn down every 1,000 miles.

REAR AXLE AND TRANSMISSION

The lubrication requirements of Heavy-Duty Hypoid Truck Axles differ somewhat from the Passenger Car Hypoid Axle. The truck operates under the most severe lubrication conditions in low gear under heavy load while the passenger car operates under the most severe lubrication conditions at high speed.

Recommended Lubricants. Rear Axles—S.A.E. 90 "All-Purpose Gear Lubricant
2-Speed Rear Axles—S.A.E. 90 "All-Purpose" Gear Lubricant
Transmissions S.A.E. 90 Straight Mineral Oil Gear Lubricant
S.A.E. 90 "All-Purpose" Gear Lubricant

(Caution: Straight Mineral Oil Gear Lubricants must not be used in Hypoid Rear Axles or 2-Speed Rear Axles.)

The S.A.E. 90 viscosity grade is recommended for "year-around" service. However, when extremely low temperatures are encountered for protracted periods during the winter months, the S.A E. 80 viscosity grade may be used.

"All-Purpose" Gear Lubricants. Gear lubricants that will satisfactorily lubricate both passenger car and truck hypoid rear

axles, have been developed. These lubricants are known as "All-Purpose" Gear Lubricants.

"All-Purpose" Gear Lubricants may also be used in passenger car and truck transmission, steering gears, and in universal joints requiring a fluid lubricant.

"All-Purpose" Gear Lubricants must be carefully compounded and of the latest non-corrosive type and of proven quality. The lubricant manufacturer must be responsible for the satisfactory performance of his product. His reputation is your best indication of quality.

Lubricant Additions. The lubricant level in the housing should be checked periodically.

It is recommended that any additions required to bring up the lubricant level be made, using the same type of lubricant as in the housing.

Lubricant Changes. While seasonal changes of the lubricant are not required, it is recommended that you have the housing drained and refilled with the recommended lubricant at least twice a year, or every 6,000 to 10,000 miles.

It may be necessary and desirable to drain rear axles and transmissions in trucks subject to severe service more frequently than recommended above.

CAUTION: Use a light flushing oil to flush out the housings when draining. DO NOT use water, steam, kerosene, gasoline, alcohol.

UNIVERSAL JOINT

½ Ton (116" Wheelbase) Models. The universal joint is the bushed trunnion type and receives its lubrication from the transmission. Additional lubrication at this point is unnecessary. The bearing retaining screw hole in the top of the housing is used to fill the universal joint at the time of assembly.

NOTE: The pipe plug in the top of the front universal joint housing on the 4-speed transmission (optional equipment) is for manufacturing purposes and is used to fill the front universal joint at the time of assembly.

¾ Ton (125¼" Wheelbase) Models. The front universal joint, immediately to the rear of the transmission is the bushed trunnion bearing type and receives its lubrication from the transmission.

Additional lubrication at this point is unnecessary. The bearing retaining screw hole in the top of the housing is used to fill the front universal joint at the time of assembly.

NOTE: The pipe plug in the top of the front universal joint housing on the 4-speed transmission (optional equipment) is for manufacturing purposes and is used to fill the front universal joint at the time of assembly.

The intermediate and rear universal joints are the needle bearing type equipped with lubrication fittings, and should be lubricated with the same type of lubricant used in the transmission.

CAUTION: Under no consideration should any of the soap type of lubricants—such as chassis lubricant, fibrous universal joint lubricants, etc.—be used.

The propeller shaft slip joint, located to the rear of the intermediate universal joint is also equipped with a lubrication fitting and should be lubricated with chassis lubricant.

1 Ton Truck 137", 1½ Ton Conventional Trucks 137" and 161", 1½ to 2 Ton Heavy Duty Trucks 137" and 161" Wheel Base, Cab-Over-Engine Trucks 134" and 158" Wheel Base. The front, intermediate and rear universal joints are the needle bearing type equipped with lubrication fittings and should be lubricated with the same type of lubricant used in the transmission.

CAUTION: Under no consideration should any of the soap type of lubricants—such as chassis lubricants, fibrous universal joint lubricants, etc.—be used.

The propeller shaft slip joint, located to the rear of the intermediate universal joint, is also equipped with a lubrication fitting and should be lubricated with chassis lubricant.

110" Wheelbase Cab-Over-Engine Trucks. The front and rear universal joints are the needle bearing type equipped with lubrication fittings and should be lubricated with the same type of lubricant used in the transmission.

CAUTION: Under no consideration should any of the soap type of lubricants—such as chassis lubricants, fibrous universal joint lubricants, etc.—be used.

The propeller shaft slip joint, located to the rear of the front universal joint is also equipped with a lubrication fitting and should be lubricated with chassis lubricant.

199" Wheelbase School Bus. The front, front intermediate, rear intermediate and rear universal joints are the needle bearing type equipped with lubrication fittings, and should be lubricated with the same type of lubricant used in the transmission.

CAUTION: Under no consideration should any of the soap type of lubricants -such as chassis lubricants, fibrous universal joint lubricants, etc.- be used.

The propeller shaft slip joint, located to the rear of the rear intermediate universal joint, is also equipped with a lubrication fitting and should be lubricated with chassis lubricant.

FRONT WHEEL BEARINGS

All Models Except Cab-Over-Engine, 1½ Ton School Bus and 2 Ton Heavy Duty Trucks. Front wheels are equipped with ball bearings and should be packed with a high melting point front wheel bearing lubricant.

Cab-Over-Engine, 1½" Ton School Bus and 2 Ton Heavy Duty Truck Models. Front wheels are equipped with "Barrel" type roller bearings and should be packed with a soft, smooth lubricant. Fibrous or viscous types of lubricants must not be used.

It is necessary to remove the front wheels to lubricate the bearings. The bearings should be thoroughly cleaned before repacking with lubricant. Do not pack the hub between the inner and outer bearing assemblies, or the hub cap, as this excessive lubrication results in the lubricant working out into the brake drum and linings.

In mounting the front wheels, great care must be taken to properly adjust the bearings, see page 46

REAR WHEEL BEARINGS

The rear wheel bearings receive their lubrication from the rear axle.

CHASSIS

For chassis lubrication, consult the lubrication chart, which shows the points to be lubricated and how often the lubricant should be applied.

The term "Chassis Lubricant" as used in this manual, describes a semi-fluid lubricant designed for application by commercial pressure gun equipment. It is composed of mineral oil (usually 300 to 500 second Saybolt Universal viscosity at 100° F.) combined with approximately 8% soap, or soaps, which are insoluble in water.

Spring Shackles and Spring Bolts

The spring shackles and spring bolts are equipped with pressure gun lubrication fittings, and should be lubricated with lubricant recommended under "Chassis Lubrication."

Brake and Clutch Pedals

The brake and clutch pedals on the cab-over-engine truck models are equipped with pressure gun lubrication fittings. On the other truck models, only the brake pedal is equipped with a pressure gun lubrication fitting; the lubricant so applied lubricates both the brake pedal and the clutch pedal. Use chassis lubricant at these points.

Steering Gear Lubrication

The steering gear is filled at the factory with an all-season gear lubricant. Seasonal change of this lubricant is unnecessary and the housing should not be drained. Whenever required, additions should be made using steering gear lubricants marketed by many oil companies. "All Purpose" or "Universal" gear lubricants or chassis lubricants.

The pipe plug is installed at this point to prevent over-lubrication, generally occasioned by the use of a pressure gun.

Over-lubrication of this unit might result in forcing lubricant up the steering gear tube to the horn button and steering wheel.

Steering Column Manual Shift Mechanism

½ Ton (116" Wheelbase) and ¾ Ton (125-¼" Wheelbase) Models

This mechanism, lubricated at the factory, is well protected and should not require further lubrication.

However, should the shifting effort become noticeably greater, remove the cap on the gearshift control box and fill box with a soft smooth grease.

Shock Absorbers

The shock absorbers should be kept filled with a low viscosity (light body) shock absorber fluid that has a pour test not higher than 30° below zero.

The same fluid is used both summer and winter and will have similar operating characteristics the year around.

The shock insulation fluid recommended should have a viscosity of from 70 to 80 seconds at 100° F. (Saybolt Universal) and should not exceed 975 to 1,000 seconds at 20° F. This type of fluid is carried by all Chevrolet Dealers.

NOTE: Do not, under any circumstances, use a shock insulation fluid heavier in viscosity, or body, than that recommended above. Heavy body fluids are detrimental to the proper functioning of the unit.

General Note

Cab-Over-Engine Models

Cab-Over-Engine trucks are provided with removable floor pans for easy access to the engine compartment.

To lubricate the generator front and rear bearings, standpipes are provided which are readily accessible after raising the hood.

½ TON TRUCK LUBRICATION

1. Front Spring Shackle (2 each side) ..... 1000 mile
2. Generator (2 oil cups) (see page 70) ..... 1000 mile
3. King Pin (2 each side) ..... 1000 mile
4. Front Wheel Bearings (see page 73) ..... 10,000 mile
5. Carburetor Accelerating Pump Shaft ..... 5000 mile
6. Tie Rod (1 each side) ..... 1000 mile
7. Steering Connecting Rod (1 each end) ..... 1000 mile
8. Front Spring Bolt (1 each side) ..... 1000 mile
9. Distributor (1 cup) ..... 1000 mile
10. Steering Gear (see page 74) ..... 1000 mile
11. Starting Motor (1 oil cup) (see page 70) ..... 1000 mile
12. Air Cleaner (see page 26) ..... 2000 mile
13. Throttle Bell Crank ..... 1000 mile
14. Transmission (see page 70) .....
15. Rear Spring Bolt (1 each side) ..... 1000 mile
16. Brake Pedal Shaft ..... 1000 mile
17. Rear Axle (see page 70) .....
18. Rear Spring Shackle (2 each side) ..... 1000 mile

Lubricant Key for Figure 73

CL Chassis Lubricant

EO Light Engine Oil

WB Wheel Bearing Lubricant

SG Steering Gear Lubricant

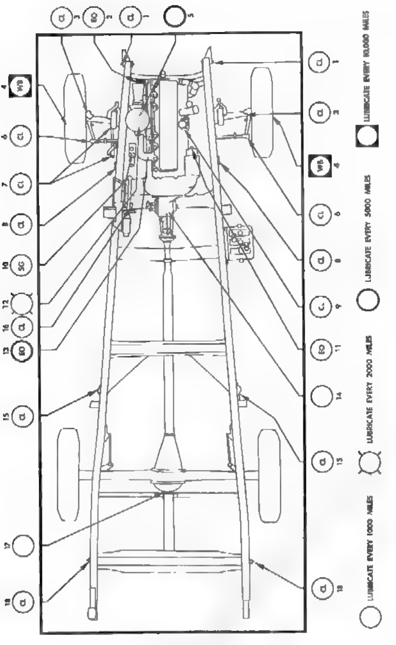

Fig. 73 1½ T[illegible]ation Chart

¾ TON TRUCK LUBRICATION

1. Front Spring Shackle (2 each side) ..... 1000 mile
2. Generator (2 oil cups) (see page 70) ..... 1000 mile
3. Carburetor Accelerating Pump Shaft ..... 5000 mile
4. King Pin (2 each side) ..... 1000 mile
5. Front Wheel Bearing (see page 73) ..... 10,000 mile
6. Tie Rod (1 each side) ..... 1000 mile
7. Steering Connecting Rod (1 each end) ..... 1000 mile
8. Steering Gear (see page 74) ..... 1000 mile
9. Distributor (1 cup) ..... 1000 mile
10. Front Spring Bolt (1 each side) ..... 1000 mile
11. Starting Motor (1 oil cup) (see page 70) ..... 1000 mile
12. Air Cleaner (see page 26) ..... 2000 mile
13. Brake Pedal ..... 1000 mile
14. Throttle Bell Crank ..... 1000 mile
15. Transmission (see page 70) .....
16. Universal Joints (1 each—see page 71) ..... 1000 mile
17. Propeller Shaft Slip Joint ..... 1000 mile
18. Rear Spring Bolt (1 each side) ..... 1000 mile
19. Rear Axle (see page 70) .....
20. Rear Spring Shackle (2 each side) ..... 1000 mile

Lubricant Key for Figure 74

CL Chassis Lubricant

EO Light Engine Oil

WB Wheel Bearing Lubricant

SG Steering Gear Lubricant

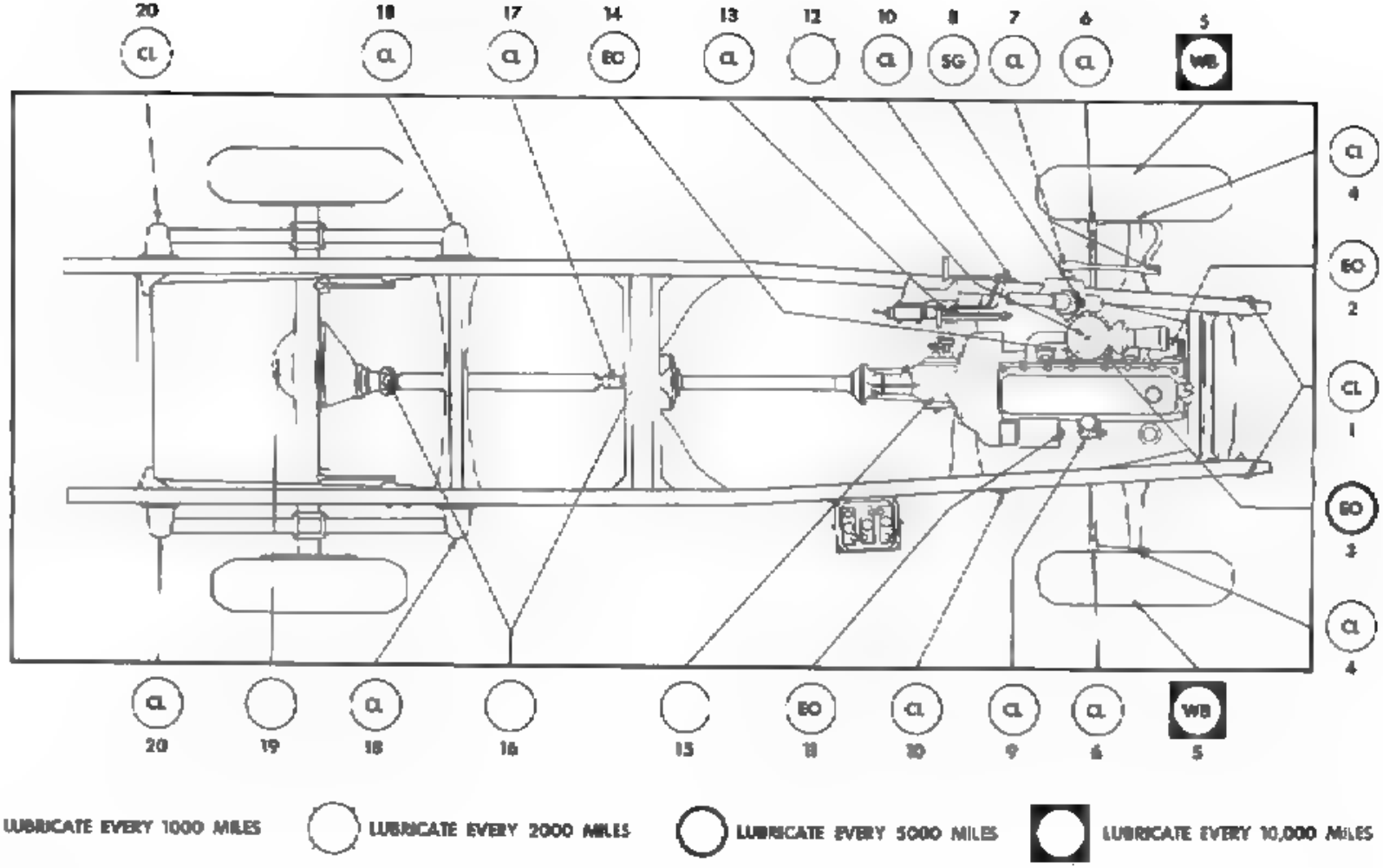

Figure 74—¾ Ton Lubrication Chart

1, 1½ AND 2 TON TRUCK LUBRICATION

1. Front Spring Shackle (2 each side) ..... 1000 mile
2. Generator (2 oil cups) (see page 70) ..... 1000 mile
3. King Pin (2 each side) ..... 1000 mile
4. Front Wheel Bearing (see page 73) ..... 10,000 mile
5. Carburetor Accelerating Pump Shaft ..... 5000 mile
6. Tie Rod (1 each side) ..... 1000 mile
7. Steering Connecting Rod (1 each end) ..... 1000 mile
8. Front Spring Bolt (1 each side) ..... 1000 mile
9. Distributor (1 cup) ..... 1000 mile
10. Steering Gear (see page 74) ..... 1000 mile
11. Starting Motor (1 oil cup) (see page 70) ..... 1000 mile
12. Air Cleaner (see page 26) ..... 2000 mile
13. Universal Joints (1 each) ..... 1000 mile
14. Throttle Bell Crank ..... 1000 mile
15. Transmission (see page 70) .....
16. Rear Spring Bolt (1 each side) ..... 1000 mile
17. Rear Axle (see page 70) .....
18. Rear Spring Shackle (2 each side) ..... 1000 mile
19. Propeller Shaft Bearing Support (see page 42) ..
20. Brake Pedal ..... 1000 mile
21. Universal Joint Sleeve Yoke ..... 1000 mile

Lubricant Key for Figure 75

CL Chassis Lubricant

EO Engine Oil

WB Wheel Bearing Lubricant for Ball Bearings.
Soft Smooth Grease for Roller Bearings.
(See page 73)

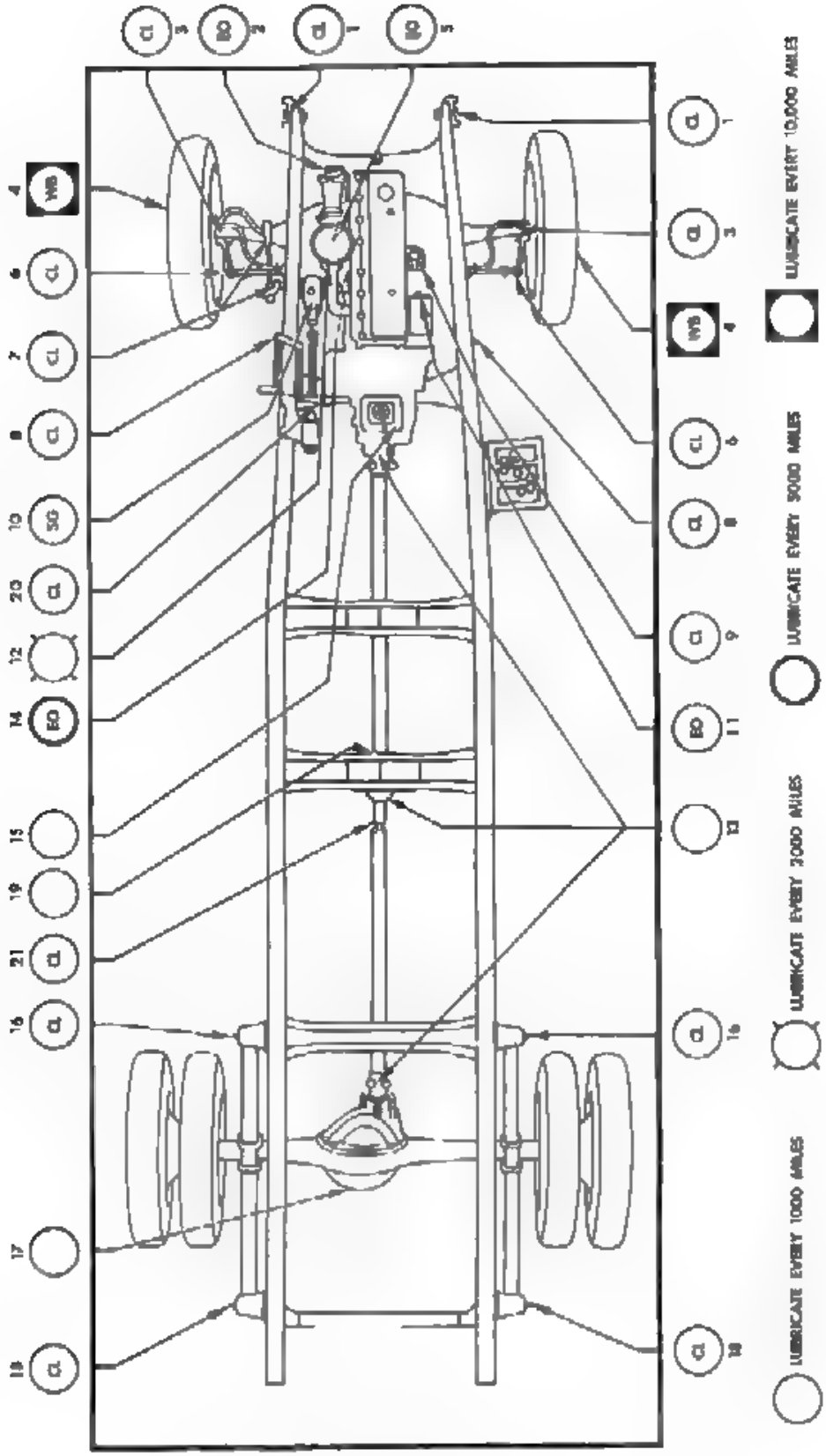

Fig. 75—1, 1½ and 2 Ton Lubrication Chart

CHAPTER IV

HINTS FOR LOCATING ROAD TROUBLES

This chapter is published with the thought that it might be of value to some owner through the pleasant years of Chevrolet ownership in case of minor road troubles. Only items that the average owner might check and correct, thereby avoiding inconvenience, expense and delay, are covered.

ENGINE

Starter will not Crank Engine

1. This trouble is usually caused by a discharged, weak or faulty battery. Try the lights and if they light, the engine can probably be started by pushing or towing the truck with the transmission in high gear. If not, it will be necessary to get a rental battery and have the battery charged. It is advisable to have the electrical system checked to determine the cause of battery trouble.

2. In some cases this trouble may be caused by battery cables, starter switch or starting motor. Check for faulty battery cables or loose connections, have the starter tested and necessary repairs made.

3. In some cases the trouble may be within the engine and caused by unusually heavy oil in cold weather, overheating the engine, or an unusually tight engine. If the engine has been overheated the engine should be allowed to cool off and the cause of overheating corrected.

4. Sometimes a tight engine can be broken loose by placing the transmission in high gear and rocking the vehicle back and forth.

NOTE: Never put water in a hot engine.

Engine Cranks but Will Not Start Readily. The following are some of the causes for an engine not starting readily.

1. Make sure the ignition is turned on.

2. Probably the most common cause of hard starting is the fact that the driver is not familiar with the correct starting procedure or fails to recognize the weather conditions. Remember these two things.

a. A warm engine in warm weather floods quite easily. Do not use the choke or pump the accelerator when starting. It is advisable to pull the hand throttle out enough to open the carburetor slightly before starting.

b. A cold engine in cold weather seldom floods, at least until after it starts. In very cold weather it is good practice to open the hand throttle about ⅜" and pump the accelerator three or four complete strokes to inject some fuel into the manifold. Keep the choke button pulled all the way out until the engine makes a few explosions and then gradually push it in. If the starting and ignition system is in good condition a cold engine will start readily. If you believe the engine is flooded due to excessive use of the choke or cranking without having the ignition turned on, open the hand throttle about half way to admit a large volume of air which will soon relieve the condition. As soon as engine starts gradually push hand throttle in.

3. If the battery is not fully charged or is faulty it may cause hard starting, especially in cold weather. This is due to the fact that cranking the cold engine places such a strain on the battery that it does not supply a suitable ignition spark. In this case it may be possible to start the engine by pushing or towing the vehicle with the transmission in high gear, after which it should be taken to your dealer to have the battery and ignition system checked. Avoid using the starter excessively; if the engine does not start readily investigate the cause while the battery is still in good condition.

4 Moisture on the distributor, coil, spark plugs or high tension wires may affect starting. Raise the hood and dry these units.

5. Improper engine timing, faulty distributor points, improper point gap, poor carburetion, intake leaks, improper valve adjustment, loose starting or ignition wiring, or faulty spark plugs may cause hard starting. Check these things systematically and make any necessary corrections.

6 If the starter cranks the engine at a good rate of speed and it still does not start, check the gasoline supply If there is sufficient fuel, step on the starter and watch the ammeter needle for slight movement which would indicate that the low tension circuit of the ignition system is working satisfactorily.

With the aid of another person it is possible to check the ignition circuit further by placing the blade of a wood handled screwdriver across the terminal of a spark plug and holding it about ⅛ inch from side of engine. Have the other party step on starter and see if a good spark jumps the gap from screwdriver to engine. If there is a good spark on this test, evidently the trouble is in the fuel system. In cold weather there may be ice in the lines restricting fuel flow. It will probably be necessary to solicit the services of a service man to make necessary repairs.

Engine Misfires. This condition may be caused by many things, some of which can only be corrected by major service operations. However, the following things should be checked.

1. Check to see that all spark plug wires are connected to the spark plugs and properly pushed down into distributor cap. Also make sure they are not shorted or broken.

2. Check the spark plugs by shorting them to determine which cylinder may be missing. Remove the questionable plugs and clean, inspect and set the point gap at .040". If the plugs are thought to be faulty they should be replaced with plugs of the same make and number.

3. A flooded carburetor may also cause a rough running engine. When the carburetor is flooded there is usually fuel on the outside of carburetor body. Sometimes tapping on the body with a pair of pliers may relieve this flooding condition; otherwise, try to keep the engine running at a fast idle until you can get to a service station.

4. This condition may also be caused by an air leak into the intake manifold. Tighten carburetor to manifold and manifold to cylinder head nuts. Check for air leaks in the windshield wiper and hydrovac lines.

5. Improper valve tappet clearance. Check clearances according to instructions on page 23.

Carburetor Floods. This is usually caused by a sticking carburetor float, dirt between the needle valve and seat, or a leaky valve and seat. Temporary relief may be obtained by tapping the side of carburetor body with a pair of pliers. The carburetor should be overhauled as soon as possible to avoid further trouble.

Engine Runs Hot. In case of a hot engine check the following.

1. Check for lack of water in the cooling system.

CAUTION: In case the engine is very hot do not remove radiator cap until it has cooled off somewhat as you may be severely burned by the steam. Never put cold water in the cooling system until the engine has cooled off as this may crack the cylinder head.

2. Check for lack of oil in the engine. Do not run the engine without oil or serious damage will be done.

3. Check for loose or broken fan belt. As the fan belt also drives the water pump the engine will get hot very quickly if the belt is broken or slips excessively.

4. Anything in front of the radiator that restricts free flow of air will also cause overheating. Make sure that the radiator air passages are not restricted and remove anything that might restrict air flow.

5. Improperly set ignition timing or improperly adjusted valves will cause overheating and at the same time cause poor engine performance. Consult your local dealer for repairs.

Engine Noises. Certain fuels may produce a pronounced knock or "ping" on acceleration only. Although this is annoying it does not seriously damage the engine. It may be eliminated or decreased by the use of higher octane fuel, retarding the octane selector setting or by having the engine tuned up by your dealer.

If a pronounced noise is noted, check to see that there is normal oil pressure and that the engine is not running too hot. Check for normal supply of oil in the engine. If you are unable to correct the cause of the noise it is advisable to call a service man or at least drive very carefully to the nearest dealer and if the noise gets worse stop the engine and wait for assistance.

LIGHTS

All Lights Go Out. This is usually caused by trouble at the thermal circuit breaker at the light switch. The circuit breaker is designed to protect the lighting circuits in case of a short circuit which would cause excessive current flow.

Lights in One Circuit Go Out. This is likely to be caused by a burned out fuse in the individual circuit.

Raise hood, release fuse box cover clips and remove cover. Inspect the five fuses carefully and replace burned out or damaged fuse. Test circuit.

If the new fuse burns out, the circuit is probably shorted. If tracing the wires and checking for short circuits does not reveal the trouble the services of your Chevrolet dealer should be solicited.

One Light Goes Out. This would indicate a burned out filament in the individual light or possibly a loose connection in the wiring. The simplest way to check this is to install a new bulb or Sealed Beam unit as the case may be (see Lamps). If this does not correct the trouble the light circuit must be checked.

One Headlamp Burns Dim. This condition is usually caused by loose connections in the individual light circuit or poor ground connection between the light and the chassis frame. Make sure all light connections are clean and tight. Make sure the ground connections are not corroded or rusted and that they are all tight.

GENERAL

Unable to Unlock Door. Water may get into the door locks as a result of storms or having the vehicle washed with a power washer. In freezing weather this may freeze the lock cylinder so that it cannot be unlocked. If the truck cannot be taken to a warm garage to thaw out and dry the lock, it is generally possible to heat the key with a match and insert it in the lock. After repeating this a few times the lock will absorb enough heat to thaw out and unlock. If this trouble is experienced the lock should be removed, dried and lubricated.

Hydrovac Fails to Operate (Heavy-Duty Models). Hydrovac failure does not prevent the normal use of the hydraulic brakes unless the brake fluid leaks out of the system. Should the hydrovac fail to operate, check for air leaks between the manifold and the hydrovac unit. If there are no vacuum leaks you should contact your Chevrolet dealer.

Engine Runs but Vehicle Will Not Move. This may be caused by broken axle shaft, stripped ring or pinion gear, broken universal joint, broken propeller shaft, transmission trouble or clutch trouble.

With all models except the ½-ton it is possible to place the transmission in gear, run the engine and inspect the drive line for location of trouble. If the drive shaft does not turn the trouble is in the transmission or clutch, while if the shaft turns

back to the differential carrier the trouble is either axle gears or axle shafts.

The full-floating type axle shafts may be changed without special equipment. See instructions under "Rear Axle Care." It may be necessary to remove the opposite axle shaft in order to remove the broken piece of shaft.

NOTE: Make sure that all pieces of the broken shaft are removed.

CHAPTER V

GENERAL INFORMATION

MANUFACTURER'S WARRANTY

It is expressly agreed that there are no warranties, expressed or implied, made by either the Dealer or the Manufacturer on Chevrolet motor vehicles, chassis or parts furnished hereunder, except the Manufacturer's warranty against defective materials or workmanship as follows:

"The Manufacturer warrants each new motor vehicle, including all equipment or accessories (except tires) supplied by the Manufacturer, chassis or part manufactured by it to be free from defects in material and workmanship under normal use and service, its obligation under this warranty being limited to making good at its factory any part or parts thereof which shall, within ninety (90) days after delivery of such vehicle to the original purchaser or before such vehicle has been driven 4,000 miles, whichever event shall first occur, be returned to it with transportation charges prepaid and which its examination shall disclose to its satisfaction to have been thus defective; this warranty being expressly in lieu of all other warranties, expressed or implied, and all other obligations or liabilities on its part, and it neither assumes nor authorizes any other person to assume for it any other liability in connection with the sale of its vehicles.

"This warranty shall not apply to any vehicle which shall have been repaired or altered outside of an authorized Chevrolet Service Station in any way so as in the judgment of the Manufacturer to affect its stability and reliability, nor which has been subject to misuse, negligence or accident."

The Manufacturer has reserved the right to make changes in design or add any improvements on motor vehicles and chassis at any time without incurring any obligation to install same on motor vehicles and chassis previously purchased.

TIRE WARRANTY

The tires (not covered by the Chevrolet Standard Warranty) are guaranteed by the tire manufacture according to the standard Tire Manufacturer's Warranty. If, in your opinion a tire is faulty, we suggest that you contact the nearest factory branch or a community tire dealer handling the make tires used on your Chevrolet.

OWNER'S SERVICE POLICY

The Owner's Service Policy, delivered with the other papers pertaining to your new truck purchase, is valuable to you for several very definite reasons. Read it carefully.

It contains valuable information such as the vehicle serial number, engine number, key numbers and delivery date.

It clearly explains the services you may rightfully expect, where they can be obtained and how to get them.

It formally introduces you to any Chevrolet dealer, who will gladly administer to your motoring needs.

The Chevrolet 1000-mile coupon attached to the policy provides a thorough inspection and adjustment of the functional parts of the truck as well as a complete lubrication at no charge to you except for engine oil. Please note that this coupon is redeemable only by the dealer from whom the vehicle was purchased.

SERVICE FACILITIES

Your Chevrolet dealer is one of a nation wide chain of reputable merchants consisting of some eight thousand (8000) Chevrolet dealers who are vitally interested in every Chevrolet owner and will do everything possible to make your truck investment profitable to you.

Chevrolet dealers are well equipped with modern service facilities, essential tools and special equipment.

Every effort is being made by Chevrolet Motor Division and Chevrolet dealers to attract the best mechanics to Chevrolet service stations. These men are supplied a shop manual

which outlines the recommended service procedures and the correct use of essential tools.

Chevrolet provides an "On-the-Job" Training Program for Chevrolet mechanics which consists of monthly study assignments, monthly review meetings, an annual written examination and the issuing of Approved Mechanics' diplomas and pins to all mechanics who pass this examination. This all tends to improve the quality of Chevrolet service rendered by this great dealer organization.

LABOR CHARGES AND REPAIR PARTS

Labor Charges. Charges prevailing at Authorized Chevrolet Service Stations are based on Flat Rate schedules furnished by the Chevrolet Motor Division. These Flat Rates are based on the use of methods and tools approved by the Chevrolet Motor Division, assuring the highest quality of work at the lowest possible price consistent with this quality.

Protect your investment by having your replacement, repair and maintenance work done by an Authorized Chevrolet Service Station, who has all the necessary tools and the factory trained men.

Repair Parts. Genuine Chevrolet parts, manufactured to the same rigid specifications as the parts used in the original assembly of the truck, are stocked by Authorized Chevrolet Service Stations.

Use only Genuine Chevrolet parts for replacement purposes because they are better and cheaper They are sold at uniform prices throughout the United States. Printed price lists published by Chevrolet are open to the inspection of owners at any Authorized Chevrolet Dealer's establishment.

CHAPTER VI

TECHNICAL DATA

Vehicle Serial Number—Stamped on plate located on left door hinge pillar on all models except flat face cowl which has plate located on left hand cowl inner panel.

Engine Number Stamped on boss on right side of cylinder block, to the rear of ignition distributor.

UNIT CAPACITY CHART

Engine Oil	5 qts.
Transmission	
3-Speed	1½ pts.
4-Speed	5½ pts.
Rear Axle	
½-Ton	4½ pts.
¾- and 1-Ton	6 pts.
1½-Ton	11 pts.
2-Ton Regular	12 pts.
2-Speed	14½ pts.
Gasoline Tank	
½- and ¾-Ton	16 gal.
All others except School Buses	18 gal.
All School Bus Chassis	30 gal.
Cooling System	
Except 2-Ton, C.O.E. and Special Heavy-Duty Radiator	15 qts.
2-Ton, C.O.E. and Special Heavy-Duty Radiator	17.5 qts.

LAMP BULB CHART

Location	C.P.	Bulb No.
Headlamp	45-35 watts	Sealed Beam
Parking Lamp	3	63
Tail and Stop Lamp		
Panel Models (1 Bulb)	21-3	1154
All Others (2 Bulbs)	3	63
Instrument Cluster	2	55
Ignition Lock	2	55
Dome Lamp	15	87

SPECIFICATIONS

Wheelbase	
½-Ton	116"
¾-Ton	125¼"
1-Ton	137"
1½-Ton (short)	137"
1½-Ton (long)	161"
2-Ton Conventional (short)	137"

SPECIFICATIONS—Continued

Wheelbase

2-Ton Conventional (long)	161″
2-Ton C.O.E. (short)	110″
2-Ton C.O.E. (reg.)	134″
2-Ton C.O.E. (long)	158″
2-Ton School Bus Chassis	199″

Engine

	Thriftmaster Model	Loadmaster Model
Number of Cylinders	6	6
Bore	3½″	3 9/16″
Stroke	3¾″	3 15/16″
Piston Displacement	216.5 cu. in.	235.5 cu. in.
Firing Order	1-5-3-6-2-4	1-5-3-6-2-4
Compression Ratio	6.5 to 1	6.62 to 1
Horsepower (AMA)	29.4	30 4
Horsepower (Rated)	90	93 Conventional 90 C.O.E.
Maximum Torque (ft. lbs.)	174	192 Conventional 189 C.O.E.
Number of Main Bearings	4	4

Transmission Ratios

	3-Speed	4-Speed
First (low)	2.94 to 1	7.06 to 1
Second	1.68 to 1	3.58 to 1
Third	Direct	1.71 to 1
Fourth		Direct
Reverse	2.94 to 1	6.78 to 1

Rear Axle Ratios

	Type	Ratio
½-Ton	Semi-floating Hypoid	4.11 to 1
¾-Ton	Full-floating Hypoid	4.57 to 1
1-Ton	Full-floating Hypoid	5.14 to 1
1½-Ton (R.P.O.)	Full-floating Hypoid	5.43 to 1
1½-Ton (regular)	Full-floating Hypoid	6.17 to 1
2-Ton	Full-floating Hypoid	6.17 to 1
2-Speed Axle	Full-floating Hypoid	6.13 to 1 high 8.10 to 1 low

ADJUSTMENT SPECIFICATIONS

Spark plug gap ..... .040"

Breaker point gap ..... .018"-.024" (new lever)
.015"-.022" (old lever)

Distributor points to break when steel ball in flywheel is opposite pointer on flywheel housing.

Octane selector should be set for the grade of fuel being used to produce a slight "ping" on accleration.

Carburetor idling adjustment (C.O.E.) .. ½ to 1¼ turns open

Carburetor idling adjustment (conv.) .. 1¼ to 2¼ turns open

Engine idling speed ..... 450 to 500 R.P.M.

Intake valve clearance ..... .006" to .008" hot

Exhaust valve clearance ..... .013" to .015" hot
Heavy-duty operation intake ..... .010" hot
Heavy-duty operation exhaust ..... .020" hot

Clutch pedal free travel ..... ¾" to 1"

Brake pedal toe-board clearance ..... ¼"

Brake shoe release after slight drag is felt
½-Ton & ¾-Ton (front & rear) .... 4 adj. cover notches
All others (front) ..... 4 adj. cover notches
All others (rear) ..... ⅔ turn of adj. pinion

Toe-in of front wheels
½-Ton & ¾-Ton ..... 1/16" to 3/16"
1, 1½ & 2-Ton conv. & C.O.E. Models 1/16" to ¼"

LOAD CAPACITY CHART—GROSS VEHICLE WEIGHTS FOR 1948 CHEVROLET TRUCKS AND SCHOOL BUS CHASSIS

MODEL				NOMINAL RATING	GROSS VEHICLE WEIGHT	TIRE SIZE AND PLY RATING		REQUIRED EQUIPMENT		REAR AXLE
TYPE	SERIES		WHEEL-BASE			FRONT	REAR	REAR SPRINGS	GOVERNED SPEED	
SEDAN DELIVERY	1508	FJ	116	—	4000	6.00-16-4	6.00-16-4	8 leaf	—	4.11 or 3.73
						6.70-15-4	6.70-15-4			
					4100	6.70-15-6	6.70-15-6			
						6.00-16-6	6.00-16-6			
LIGHT DUTY	3100	FP	116	½ Ton	4200	6.00-16-6	6.00-16-6	8 leaf	—	4.11
						6.70-15-6	6.70-15-6			
					4500	6.50-16-6	6.50-16-6			
					*4600	16-6 or 8	16-6 or 8			
	3600	FR	125½	½ Ton	5200	15-6	15-6	2-stage, 7 leaf	—	4.57
						7.00-17-6	7.00-17-6	2-stage, 8 leaf		
					5400	15-8	15-8	2-stage, 7 leaf		
					*5800	7.00-17-8†	7.00-17-8†	2-stage, 8 leaf		
	3742	FT	125½	½ Ton	7000	7.00-17-8	7.00-17-8	8 leaf	—	
MEDIUM DUTY	3600	FS	137	1 Ton	5700	7.00-17-6	7.00-17-6	2-stage, 8 leaf	—	5.14
					6100	7.00-17-8	7.00-17-8			
					6700	7.50-17-8	7.50-17-8			
					*8800	7.00-18-8	7.00-18-8 Dual	11 leaf		
	3942	FU	137	1 Ton	7500	7.50-17-8	7.50-17-8	11 leaf	—	
					*10000	7.00-18-8	7.00-18-8 Dual			
	4100	BJ	137	1½ Ton	7500	7.00-20-8	7.00-20-8	Heavy 11 leaf	—	6.17 or 5.43
					9500	6.50-20-6	6.50-20-6 Dual			
	4403	RK	161		*11000	7.00-20-8	7.00-20-8 Dual			
					*12300	7.50-20-8	7.50-20-8 Dual			6.17
HEAVY DUTY	5100S 5400S	RVS RWS	137 161	1½ Ton Special Conventional	13000	7.50-20-8	7.50-20-8 Dual	Heavy 11 leaf and auxiliary, brake booster, and heavy duty frame.	^48 MPH	6.17 RD or 2 speed 6.13 and 5.19
					*16000	7.50-20-8‡	8.25-20-10 Dual		^49 MPH	
	5100 5400	RV RW	137 161	2 Ton Conventional	13000	7.50-20-8	7.50-20-8 Dual		^48 MPH	
					*16000	8.25-20-10	8.25-20-10 Dual		^49 MPH	
	5100S 5400S 5700S	RPS RRS RSS	110 134 158	1½ Ton Special Cab-Over-Engine	13000	7.50-20-8	7.50-20-8 Dual		^48 MPH	
					*16000	7.50-20-8‡	8.25-20-10 Dual			
	5100 5400 5700	RP RR RS	110 134 158	2 Ton Cab-Over-Engine	13000	7.50-20-8	7.50-20-8 Dual		^49 MPH	
					*16000	8.25-20-10	8.25-20-10 Dual		^48 MPH	
									^49 MPH	
SCHOOL BUS CHASSIS	4702	RK	169	42 Pupils	13500	7.50-20-8	7.50-20-8 Dual	2-stage, heavy 11 leaf, with brake booster and heavy duty frame.	35 MPH	
				48-54 Pupils	*15000	8.25-20-10	8.25-20-10 Dual			
	4502	RL	161	30 Pupils	10500	6.50-20-6	6.50-20-6 Dual	2-stage, heavy 11 leaf, and heavy duty frame.		6.17 or 5.43
				36 Pupils	*12000	7.00-20-8	7.00-20-8 Dual			

*—A plate is supplied with each vehicle showing chassis number and maximum Gross Vehicle Weight (G.V.W.).
†—Denotes Regular Production Option 7.50-17-8 ply tires with no increase in G.V.W.
^—Governed speed at 2800 RPM of Engine.
‡—On 1½ Ton Special RPS, RRS, RSS, RVS and RWS Series 8.25-20-10 ply tires Regular Production Option for the Front with no allowable increase in 16,000 lb. GVW.
Never use an Extra Ply Rating (high pressure) Front with a Balloon Rear.

LUBRICATION RECORD

DATE	LUBRICANT CHANGED AT FOLLOWING MILEAGE			
	CHASSIS	MOTOR	TRANS-MISSION	REAR AXLE